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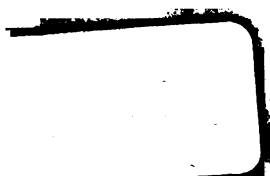
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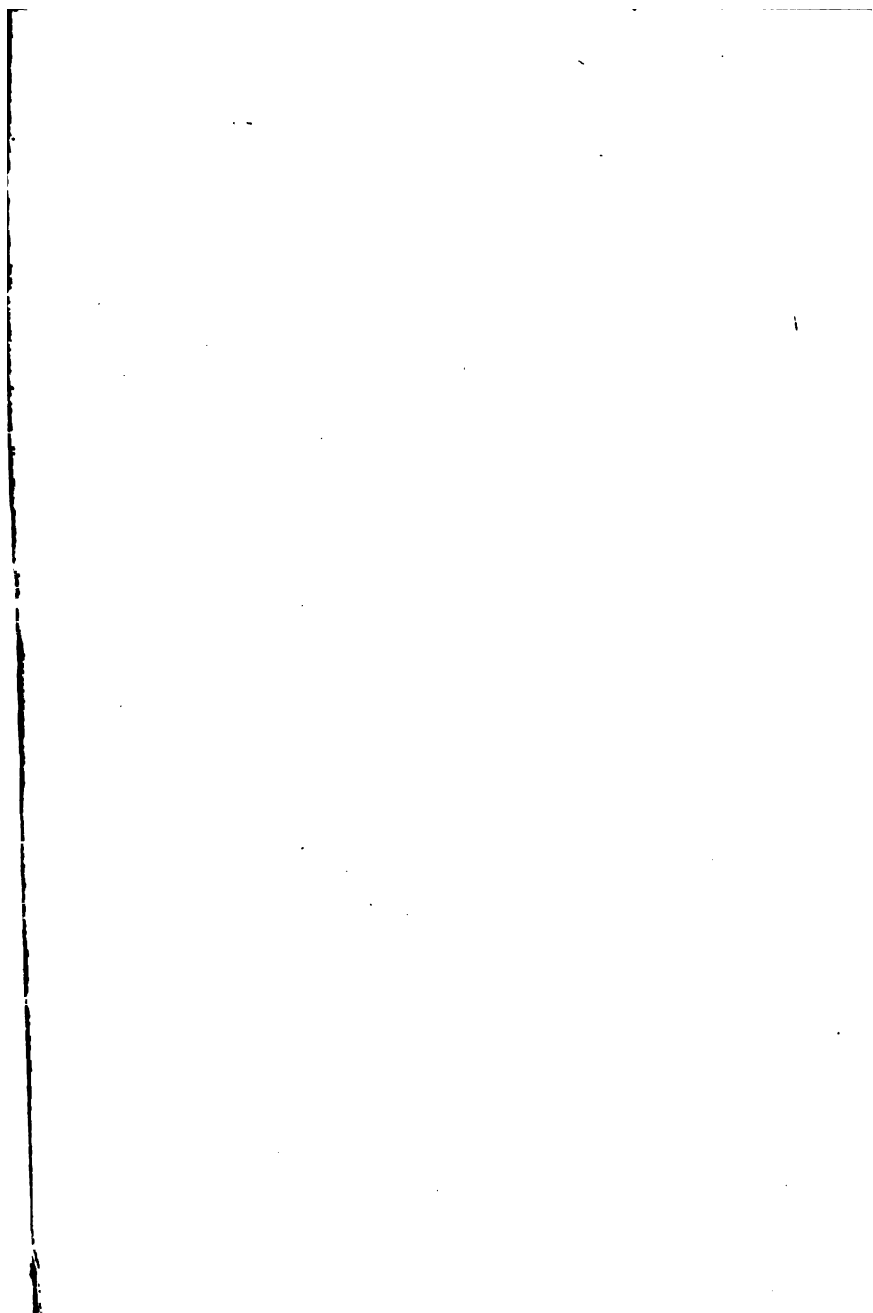


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INVISIBLE LIGHT.

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Invisible Light,

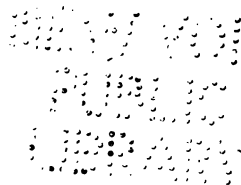
OR

The Electric Theory of Creation.

BY
warder and
GEO. W. WARDER.

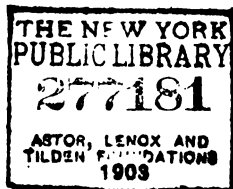
"My definition of electricity is invisible light."

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PREFACE.

THIS volume is not intended as an abstruse scientific work, but the statement of a new theory, and its comparison with the old ones for the instruction of the masses.

It is well said, "every age has its predominant thought." That of Greece was beauty, and she excelled in sculptured grace of statue and temple; that of Rome was power and she conquered the world; that of the sixteenth century was reform, and states and religions were torn into warring factions; that of the eighteenth century was liberty, and nations threw off the thralldom of empire; that of the nineteenth century is *progress*, and rivers are bridged, mountains tunneled, and by the swift wings of electricity time and space are almost annihilated.

This is the golden age of opulence; the brilliant and marvelous epoch of electricity. The world has had its age of stone and bronze and iron and silver, but this is the greatest of them all, for now is the full burst of the golden age of mechanical marvels, and electrical wonders.

Man has at last imbibed the thought of Deity, and brought to his aid the same plastic and mysterious forces to bless and control the earth, that God used to create and evolve it, when "He said let there be light, and there was light." This age exemplifies the maxim, "Ignorance is the curse of God, but knowledge is the wing wherewith we fly to heaven."

Modern science has gained new conceptions of those imponderable forces that physicists have hitherto failed to classify, and which have a commanding sovereignty over matter.



INVISIBLE LIGHT,

OR,

THE ELECTRIC THEORY OF CREATION.

CHAPTER I.

THE THEORY STATED,—ELECTRICITY IS THE MEDIUM AND AGENCY OF CREATIVE POWER IN THE EVOLUTION OF THE UNIVERSE.

It is said "True science differs from everyday knowledge mainly in the precision of its data and inferences, and the scientific mind is held rigidly in check, and made to bow only before the proven fact." While this is true, it is also true that science with all its exactness is full of theories not yet proven.

Since Lord Kelvin, the Newton of our age, has said the attraction of gravitation, and the vortex theory are but "dreams" because unproven; And Leibnitz charges the great Newton with introducing the invisible and occult principle into science, may I not be permitted to "dream" also, and reason on "the eternal fitness of things"? Oft-times these day dreams by which men reason from what they know, to what they do not know, prove to be wonderful realities.

Such were the dreams of Kepler and Copernicus, Columbus, and Galileo, Harvey and Edison. Franklin dreamed that with his kite he could draw the lightning from the skies, and since then electricity has been the servant and plaything of man's ingenuity.

Morse made it convey instantly living thoughts over the continents, and Field under the sea. Watt saw the steam toss the lid from a teakettle of boiling water, and dreamed of the power of steam, and soon swift railroad trains traversed the land, and fleet steamers the ocean. Newton saw an apple fall to the ground and dreamed of the attraction of gravitation.

Lord Kelvin saw the smoke rise up in ringlets from a cigar and dreamed of the vortex theory. Well, are we not "such stuff as dreams are made of," and is not all life and power invisible, and the sovereign forces of light, heat, electricity and magnetism imponderable forces? As imponderable as a dream, as invisible as a thought, and yet they control all physical phenomena, and uphold the universe; just as thoughts and dreams and instinct control all physical organisms. All organic matter is in the constant keeping of invisible forces, affinities and attractions, that govern revolving atoms and revolving worlds; and yet they are as intangible as "the baseless fabric of a dream." All matter and motion are but the day dreams of the universal attraction of electro-magnetism, and chemical affinities. So matter in its finest atomic elementary form clings to these forces, as thought clings to the mind, as the dream clings to the dreamer, as the created clings to the creator. The finely balanced magnetic needle fixes its lines of rest under the electric currents of guidance that encircle the earth as a vast magnet. The earth receives its electric currents of guidance from the greater magnet the sun, and the sun from space or greater systems of magnetic constellations controls all matter like a charm. And so from suns to atoms, and from atoms to suns this potential electric energy possesses the universe like a dream. This electro-magnetic energy is superior to matter, and determines its lines of rest and modes of motion.

In pondering over that mysterious entity known as elec-

tricity, I have evolved a new theory of the world's creation. It will take time, research, and more perfect demonstration to place it among the exact sciences.

Yet it seems reasonable and natural, and simplifies all scientific investigation. It removes much of the supernatural element to which men in all ages have bowed in wonderment and awe. They have delighted to imagine the universe as spoken into existence from nothing by the word of Omnipotent Deity. The more marvelous and unreasonable this "presto! now you don't see it, now you see it" creation, the more their credulity and admiration are excited.

They look upon Deity as a self-conscious prestidigitator, a proud occult magician working wonders for the special praise of admiring creation. They are prone to believe he created the universe instantaneously as he created light, not knowing that light was electricity, the only substance or entity in nature that is instantaneous. That it is the work of this same electric force under the propelling will of the creative spirit that through countless ages has evolved the universe.

They forget that God is all-sufficient and independent, is the perfection of reason and works by means, by laws. Man thus discarding his God-given reason is satisfied to exclaim —

"God moves in a mysterious way His wonders to perform;
He plants His footsteps in the sea, and rides upon the storm."

But the Creator being wiser than his superstitious creature man, endowed him with reasoning power to search, discover, and comprehend the economy of God and nature. To find out by what means God brought order out of chaos, harmony and beauty out of discord and darkness; from nothingness created suns and worlds and hurled them through infinite space.

I believe that in the present century man has imbibed the thought of Deity ; has discovered the same plastic force and agency by which the Creator wrought the wondrous miracle of complex and infinite creation. And that force and agency is the invisible powers of electricity. I believe that this mystic force in nature is the right hand of creative power in shaping and controlling the physical universe.

If man by his inventive genius can utilize that mysterious potential entity known as electricity, and run it along a wire no larger than a child's finger five or ten miles from where it is generated and make it exert a hundred or two hundred horse-power in propelling machinery, and carrying the burdens of commerce ; what cannot Omnipotence accomplish through his great electric generators, the suns, and the electric substance stored in all nature ? By means of this wonderful potential substance subject to his will as the law of nature, he creates and preserves the existence and integrity of the universe. What but this mystic force could cause the earth to shoot through space at the rate of a million miles a day, and revolve on its axis at the rate of a thousand miles an hour ? What but electric magnetic attraction holds it together and prevents it from flying to pieces, or the movable things on its surface from flying off into space ? There is no other force in nature but electricity that could work these stupendous miracles, and God works through the forces in nature.

The sun is the great electric magnet whose attraction fixes and maintains the orbits, seasons, and life of the solar worlds and planets. The earth is only a lesser magnet that holds and fastens all things upon its surface. This force Newton called the attraction of gravitation and cohesion, but I affirm it is the unseen force of electricity.

Since this wonderful electric substance which produces light, heat, and force interchangeable, has been discovered

and applied by man to a thousand marvelous uses, it should cause us to reason up to its utility in the creation and government of the universe.

When we see this marvelous force in the electric storms and cyclones, uprooting the forests; shaking massive buildings into atoms until they are like motes in the sunbeams; and hear the reverberating thunders of its artillery shaking the heavens and the earth; and lashing the ocean into mountainous billows; swaying her tides, and exploding volcanoes and earthquakes, we stand in awe of its wonderful power. We say, here is the cosmic force, and protean power in nature.

When we see it giving motion to atoms and worlds, touch and feeling to insensate matter, rounding pebbles and planets, feeding suns, and lighting and heating the universe; we are forced to exclaim, surely this is the plastic force by which God created the heavens and the earth, and all things therein.

Not that this force is God, it is but the instrument of his power. Back of it and controlling and propelling it is the eternal spirit, the creative ego, the everlasting I am. Evolution is not God, though some scientists seem to think so. It is the law God has impressed upon matter, and clearly teaches there is an Omniscient Lawgiver.

I am therefore impelled to formulate and adopt the following electric theory of the creation and evolution of the universe:

First; *Electricity is the medium and agency of creative power in the evolution and government of the universe.*

That when God said "Let there be light, and there was light," that light was the lightning flashes and currents of electricity, which came forth to illumine chaotic darkness, and began gathering the invisible atoms, and etheric nebula of space into suns, and worlds. It was the word "light" which unbound and let forth the protean power, and cosmic

forces, of light, heat, and electricity, under which all physical energy manifests itself, and which is the creative energy of the universe.

Second; *Electricity is the medium and connecting link between spirit and substance, soul and body, mind and matter, dust and Deity, God and the universe.*

Third; *What we call the attraction of gravitation and cohesion are the unseen forces of electric magnetic attraction.*

Fourth; *What are known as the centrifugal and centripetal forces in nature, and all the movements of atoms and worlds, are produced and controlled by this universal electric magnetic substance.*

Fifth; *All light, heat, and force in nature is electricity in some of its forms, and constitutes the great chemist, wonder-worker and world-builder of the universe.*

Sixth; *The Omnipotent Creator holds the revolving earth, the planets, and all stellar systems of infinite space in the grasp of his boundless power and intelligence, by means of this subtle, invisible, potential agency.*

As man controls his body by the electric currents that communicate his thoughts thereto, so God controls the universe by the electric currents in nature. The vast universe hangs upon nothing in empty space but the invisible arms of electricity; but they are the invisible arms of Deity.

Seventh; *All matter is one matter, and matter has no intelligence.* There is but one substance, of which all material things are created, which has its foundation in the invisible elementary atoms of ether, and which by marvelous electric combinations and aggregations is changeable into infinite and varied forms and functions; electricity being the propelling force in its changes and evolutions. Matter has no intelligence, but through electric energy of attraction and repulsion, has electric affinity selection and repulsion.

Eighth; *There is but one spirit, the Creator of all things;*

the Father of all spirits. "In whom we live, move and have our being." All souls are atoms of the one spirit in varied forms and degrees of intelligence; and each is aspiring as it has opportunity to infinite knowledge and happiness, and in the ultimate ages will attain to both.

Ninth; *There are but three indestructible original entities in the universe, of which all things are composed—spirit, matter, electricity.* From these triune substances or entities God produces the wonders of boundless creation. Two are invisible, imponderable realities, but none the less real.

Tenth; *Man is an epitome and likeness of the universe; in that he is a powerful magnet like the suns and worlds and all living organisms.* He is the combination of all entities, and has a spiritual as well as a physical body. The spiritual body permeates every atom of the physical body, preserves its autonomy and gives it intelligent conscious life.

Man controls his body as God controls the universe by electric magnetic currents. These currents run along the nerves and tissues of man's body like connecting electric wires communicating the spiritual command to matter, causing it to obey the behests of its spiritual master. Death is the departure of that spiritual master from its transient tenement—the separation of the spiritual body from the physical body. Death is the key that unlocks the door to another life. The physical body then goes back to its natural elements. The spiritual body goes like a flash of electricity to the sun or central suns,—which are the realms of departed spirits. The spiritual body at death knows its destiny as the needle knows the pole, as the earth knows its orbit, as untrammelled spirits comprehend space and futurity.

It needs no previous knowledge of its destiny. Its spiritual conception and infinite perception are all-sufficient.

There can be no punishment after death, except remorse

for evil deeds, for only through memory can the pangs of suffering assail the soul. You cannot punish spirit as you do tangible matter. You cannot burn it in fire, drown it in water, puncture it with a spear, cut it with a sword, or nail it to the cross. It can soar untrammelled where matter never has been, and once created is forever indestructible.

Eleventh; *The will of God is the law of nature, which is made manifest to the material world by electricity operating through, and permeating all matter.*

God's will is promulgated in nature as man's will is made known to his physical body, by the electric currents that communicate his wish and purpose thereto, and which become through nature's laws almost automatic in their rapidity and ease of operation.

Twelfth; *Spirit which is supposed to be beyond the realm of positive science, is the eternal vital controlling force back of all matter, and all electric forces, and is the greatest factor in the science and philosophy of all things.*

Spirit is known by its phenomena or effects almost as well as electricity and magnetism, and should have a place in science by the side of invisible imponderable matter, and the invisible potential forces of electricity. The spiritual is the foundation of the real—the life seed of all material organisms, as electricity is the invisible energy of their growth and development. No temple was ever built, no picture painted, no poem written, no world created, no blazing sun sent forth until there was a spiritual creation of the same in the mind of man or Deity. Every structure, organism or form in the material world is the product of a spiritual intelligent conception and construction emanating from the soul of God or man.

Science should accept all truth physical and spiritual. It should not run to extremes, and declare that because matter is tangible and its phenomena observable there is nothing

beyond or behind it; or that because spirit moves and controls matter that therefore matter is a delusion of the mind. To do one is to deny the proof of the senses, to do the other is to ignore our conscious perception and intelligent existence.

Matter is the substance from which the creative spirit evolves suns and worlds, and systems of worlds, and all their varied products and inhabitants. Electricity in its varied manifestations and offices of magnetic attraction, and repulsion; etheric currents; vibratory movements; drawing and propelling, working and evolving, ceaseless and untiring; interchangeable into light, heat and force through all the æons of eternity; is the tool or machinery of Infinite Spirit, and Omnipotent Intelligence to evolve and maintain the universe. Electricity is the perpetual life motion of all material existence. It prevents stagnation and decay, and renews all changing forms and substances. By its positive and negative energy acting and reacting it produces and controls all the movements of visible and tangible things.

By this wonderful force the God of nature creates, preserves and directs all the visible forces and substances of nature.

By this word of the spirit, by this tongue of the soul, by this right hand of power, the worlds are held as in the hollow of God's hand. The atmosphere which surrounds this earth is a cushion of electricity forty miles deep, and like the encompassing arms of Deity holds it in its perfect balance and allotted orbit in conjunction with the electro-magnetic attraction of the sun, while the electric law of evolution is the finger touch of Deity that makes the world go round.

By this wonderful potential substance or entity we call electricity, the Creator dispelled darkness, evolved light, gathered atoms from invisible ether, crowded them into

nebula, heated them into gases, compressed them into solids, rounded them into spheres ;

And hurled them forth as wingèd stars of light
To glitter in the realms of conquered night.

In that early dawn, "the beginning," all the now visible creation was in a state of solution, and needed but the Divine Mind, "the moving spirit," to set the chemical electric magnetic positive and negative currents in motion to evolve it into a marvelous, boundless universe.

It does not detract from the wisdom and power of the Creator, that he should have such a wonderful, invisible, potential agency to do his marvelous handiwork.

By the power of his word he spoke this subtle, all-powerful essence into existence when he said, "Let there be light"; and bid it accomplish his will, and his purpose; and be the creative, upbuilding, controlling energy of all created material existence. God by one word, "light," spoke perpetual motion and power into existence.

It may be he has impressed upon matter the inexorable laws of nature which constitute his will, and given electricity charge and guardianship of their enforcement, and "gone into a far country." It may be he has continuous daily care of all things; but it matters not, for in electricity the invisible right hand of his power is all-sufficient strength to uphold and control the universe; and by all the logic of law and reason, the act of the agent is the act of the principal, and God is still "the way, the truth, the light, the life." His spirit is the seed-germ of creation. He is the masterful ruler of the universe; and law, and electricity, are the agencies of his Omnipotent power.

He works and governs by means, by invisible laws, and invisible forces. God's spirit cannot operate directly upon matter, it must have a medium and connecting link, just as *man must have a medium and connecting link between his*

spiritual intelligence, and the atoms that compose his body, and the things about him; and as that connecting link and medium in man is electricity, so plain and simple are the laws of nature that God has no other medium between him and all material creations. Electricity therefore is both the creating, governing energy of Deity over the universe; and the governing energy of man over all material things.

Man has five senses, seeing, hearing, feeling, tasting, smelling. These are all communicated to the soul or spiritual body by electricity.

Man feels by the electric flashes that come from every part of his body, that tingle on his nerves, and beat upon the brain, and touch the garments of the living soul. He sees through the medium of the electric etheric waves of light that come from the vibrations of the air around him. By these swift electric flashes, the infinitesimal rays of electric light enter the retina of the eye, and touch the quick vision of the soul. He hears by the atmospheric waves of electricity that beat upon his ear drums. He tastes and smells by the same electric process; and his five senses are but the inward communication of outer surroundings, conditions and substances, to his mental or spiritual perception by means of electricity.

Thus, the creative Deity sees, and hears, and knows, and by the same forces directs and sustains all things. We are the spiritual atoms of Deity, his offsprings, made in his spiritual image, and we see and comprehend and control matter just as he does, but not to the same extent, for we are finite; and he is infinite in knowledge and power. In his infinite wisdom and power, in the economy and simplicity of boundless intelligence, he has made all material things of *one matter*, or substance; controlled by one invisible power,—*electricity*; and made after one unchanging but ever changeful pattern,—*the electro-magnet*.

All suns and worlds, man, and all vegetable and animal

organisms are electro-magnets—or electrical machines. The infinitesimal atom of space, and the primordial cell is a tiny battery. All vegetable and animal life, and structure from the protoplasm to man are brought forth under electrical impulse, and obtain their growth and power through electrical energy.

Man in his physical structure is the most perfect electrical machine of all animal existence on earth that God through electrical agencies has created. And well may it be so, for both nature and revelation proclaim "Know ye not that your bodies are the temples of the living God." Your spiritual bodies are a reasoning atom of the Infinite Creator, and your material body is the most perfect structure of his physical creation, suited to entertain its royal visitor.

By the wondrous electrical energy it contains, it gives marvelous touch and activity to the human brain and hand; and skill to the deft fingers, as they are directed by the majesty of mind. It makes the soul vibrate with exquisite pleasure, or keenest pain, as it tenders to its spiritual seeing, feeling, throbbing, master, the external proofs of surrounding things and conditions.

Thus, God from the spiritual centre of the universe sees, hears, and knows all things. The electric flashes from the centre to the circumference of creation touch the hem of his mystic garments, and fall in beautiful rainbows at his feet. They bring to him the music of the singing spheres; and the silence of untenanted space speak to him in "the still small voice" of the refined electric currents.

They bear his thoughts on the wings of invisible lightning, and carry his saints to their eternal rest by his great white throne. They write his name on the granite hills, and in the rock-ribbed foundations of the earth. They explode the earthquakes, and tread the pathway of the cyclones,

while they spread the fiery tresses of the comet, and shoot the golden arrows of the sun.

They throw the aurora of eternal brightness above his fadeless brow, and canopy the dome of heaven with diamond coronets. They glisten in the sea of glass, and burnish the streets of gold. They carry his voice upon the sunbeams, and whisper it in the chamber of listening souls, sweet as the lullaby of seraphim. They nestle in the bosom of the sleeping infant in its smiling dreams, and print the dimples on its cheeks where the angels first kissed it on the shores of life.

Electricity, is the great chemist, wonder-worker and world-builder of the universe. It performs the miracle of digestion and assimilation of food, giving to inert matter the living touch of vitalizing life. It builds bone and nerves, tissues and ligaments, blood corpuscles and grey matter of the brain; and weaves all flesh as a deft weaver weaves his warp and woof, his tapestry and silks. It mixes the elements of air, and earth and water in just proportions to all life, and brings the healthful ozone from the skies. It is the wondrous magician of all time and space. At the divine fiat it shook the ether into nebula, the nebula into worlds, the worlds into constellations, the constellations into a universe. It shaped planets, and rounded suns, and hurled them forth to circle in the chorus of the singing spheres. It gave form and functions to all matter, from the rounded pebble to the stars; from the raindrop to the surging seas; from the chirping cricket to the sporting leviathan; from the toiling ant to the raging lion; from the helpless infant to the giant man.

Electricity like evolution, is not God, but the messenger and executive of his will to all creative substances. The ambassador of spirit to matter, the autocrat of communication between all the faculties of mind or soul, and all the functions of physical existence. It is the law of affinity in

matter, of selection in atoms; and whispers to the body the intuitions of the eternal spirit; and guides insensate matter to do the will of creative Omnipotence. It promulgates throughout the universe those immutable laws of nature whose "seat is the bosom of God, and whose voice is the harmony of the worlds."

This mysterious agency and substance we call electricity, this mighty minister of life and death, is not alone in the storm that darkens the heavens and shakes the earth with its artillery. It is over us, and around us, and beneath us, and within us every moment. It lives in the blade of grass; it shines in the dewdrop; it descends in falling rain. It gives the starry form to the snowflake, and the streaming light to the aurora. It girdles the land, and the sea, and the mountains with unseen currents of rapid motion and resistless power. It lives in all life, it moves in all motion, it dwells in all space. It thrills in sympathy with all living organs in all thought and feeling. It telegraphs between mind and matter in all mental action. The working brain must feel the touch of its subtle power, or it will cease to kindle into flame the thoughts that thunder forth in speech, or burn along the living page.

With all our skill and practice in insulation we cannot imprison this subtle essence. We cannot compel it to travel alone upon our lines; we can master only the smallest fraction of its power. The chained messenger that goes obediently in the calm; throws off its fetters and breaks away from all our lines and batteries when the invisible armies of electric power come out for a great field-day,—shouting to each other in thunder voices, and sweeping in stormy waves through the troubled air from continent to continent. And this mysterious and unmasterable power teaches us how dependent we are on him in whom "we live, move and have our being."

For this electric power which strikes a living man to

earth in a thunderstorm is slumbering in every breath of air we breath. It follows the course of every nerve in all our sensations of pain or pleasure. It pervades every particle of our bodies, and comes in contact with every faculty of our mind.

Everything we see is so full of electric force that it can be made to yield a spark of fire to our touch. In the frosty air of a winter day we can send out sparks that shall kindle a flame from our own fingers, and yet ourselves not feel the heat of the fire with which our whole frame is charged.

I have stood beside the telegraph operator while he made a signal and received an answer over fifteen hundred miles of country, and the answer followed the question in the shortest time I can make one blow follow another with my hand. I was filled with awe by the simple experiment, for it made me feel that I was in the presence of an unseen power that pervades all nature and surpasses all comprehension. It helped me to grasp the thought that everything in the universe may be bound together by so many strong and secret bonds as to be but one thought to the Infinite Mind. The wave of electric force I start with one stroke of my hand may extend around the earth, and beyond the sun and stars.

This mysterious electric force which sleeps in the still air, and thunders in the dark cloud, is a beneficent power. Its office is to preserve life, not to kill. Where it destroys one it saves a million. It flows in harmless and healthful currents through all living bodies, and only here and there does it rend and destroy the organism of life.

It does no injury to bodies that welcome its coming. It blasts and burns only when resisted. The slender blade of grass, the pointed spires of the bearded grain, the trembling leaf, the delicate tendril of the vine, draw the lightning from the cloud silently and safely, while the solid rock is rent

with a crash ; and the loftiest monuments of man's pride is leveled with the dust.

It has held in perfect balance the suns and worlds that circle through the immensity of the universe. It is the infinite power of Omnipotent strength. In all the sweep of countless ages, no shock of armies, no thunder of battles, no hostile hand has hurled the sons of morning—the stars and planets from their flaming thrones. No revolutionary archangel has lifted the standard of discord upon the plains of heaven. God's unwearied, unaided hand—the right hand of his power—electricity—the emanation of his Omnipotent spirit, magnetism, still holds the firmament with its millions of worlds within the grasp of his intelligent, eternal power.

Yet of this subtle, mysterious essence we call electricity, —light, heat and force, we know nothing except its effects ; just as we know nothing of the essential being of God, except so far as we see the manifestations of his presence and power.

We see all things by the help of light, but light itself we cannot see. We feel the comfort and warmth of heat, but heat we cannot see. We feel the power and force of electricity, but electricity we cannot see. These belong to invisible matter and invisible forces. What says the dogmatic materialist, the one-sided physicist, is there invisible matter ? Certainly there is. There is a boundless universe of invisible matter in the air, in the sky, earth and sea ; and through all the viewless void of infinite space. As invisible as spirit, as intangible as soul, as imperceptible as Deity and with its electric force as potential as Omnipotence. It is light, heat, force,—electricity, etheric atoms, magnetic attraction and repulsion. We cannot weigh them in balances ; we cannot measure their form or dimensions. We cannot grasp their body or substance ; we cannot *hear the sound of their coming or going.*

Their presence in every drop of water makes no change of taste in the purest fountain. Their waves are shot from the sun or stars with such terrific force that they lose no velocity in flying a thousand million of miles. The vibrations of the air in producing the highest note of sound upon the ear are about eight thousand in a second; the waves of light in producing the sensation of color upon the eye are eight hundred millions in a second. The force with which rays of light are shot from the sun to carry them so fast and so far is thirty thousand million times greater than the force with which a leaden ball falls to the earth. If a ray of light equaled the weight of a grain of sand, a single second of sunshine would shatter the earth to atoms.

A ray of light is so swift and strong that it will go round the earth a thousand times while I am pronouncing a word of two syllables.

It is well said, neither Milton, nor Goethe, nor Byron could describe the original creation in terms more simple or sublime than the language of Moses. "God said let there be light and there was light." Neither Newton, nor Leibnitz, nor Herschel, nor Humboldt could say anything greater or truer of the Infinite Creator than the beloved disciple when he said, "God is light." God is everywhere by the very necessity of his nature, and light by its immeasurable diffusion gives us our grandest conception of the immensity of his being.

The mightiest telescope piercing the awful depths of space, can find no bounds beyond which light has never passed. Set your eye to that mystic tube which sweeps the ranks of the fiery constellations, and there is a universe of worlds pictured upon the inner chamber of the eye. How many years has their light been flying at the rate of almost twelve millions of miles a minute? The period of its flight is equal to all the generations of human history. There is no life beyond the reach of light. If the light of

the sun should be put out and his electric fires cease to burn, in three days there would not be a trace of vegetable or animal life left on the globe. The ocean of water which is always floating in the air above us would descend in deluges of rain, and drifts of blinding snow. The temperature of the whole atmosphere would fall 260 degrees below the freezing point, and no plant or animal could live in such a cold for an hour. It is electricity with its silent, peaceful waves of light and heat which keeps the world from becoming an icy grave, a wilderness of death at any hour.

To show the wonderful power of electricity to produce heat as well as light, the heat on the surface of the sun which sends us our light as well, is so intense that to equal it on one square rod of ground we should be obliged to burn a thousand tons of coal a day. Yet this great blazing electric luminary of the heavens is thirteen hundred thousand times larger than the earth; and sends out two thousand million times as much heat and light as the whole earth receives; and still this great electric fire burns on from century to century, with warmth and brightness undiminished through all the æons of the past. And this marvelous electric fiery fountain flows and flows as free and full from age to age. What a miracle of Omnipotence and electricity! And there are other suns a million times larger than our own—so many we cannot count them—standing as landmarks and lighthouses in the infinite ocean of space, blazing with a brightness that never grows dim, diffusing life and blessing with an affluence that knows no bounds. Arcturus sends forth a flood of light five hundred times as great as our noonday. Our sun is more than a million times as large as our earth, and yet a star in the Pleiades is equal to twelve hundred of our suns, and there are eighteen millions of suns in the system to which our sun belongs. That which reveals the nature and constitution of

the most distant worlds is light and heat, and they are the manifestations of electricity.

They tell us that a uniform, all-pervading energy rules through all worlds, gives all life, sustains all harmony and lives on unchanged from age to age. The inspired word says "God is light," it also says "God is love," and we say he is the creative intelligent power that sends forth and controls that most mighty mysterious electric essence which is an emanation from his Omnipotent Spirit, which fills all space, sustains all life, and gives beauty and harmony to all worlds.

The moon propelled by electric attraction revolves around our earth. The earth by electric attraction with its associate planets revolves around the sun. The sun with its circling planets, moons, asteroids and comets propelled by the same electric force is rushing around a mightier orbit, which it will take eighteen hundred thousand years to accomplish.

All the infinite hosts of heaven are grouped by electric forces into clusters and systems that revolve orbit within orbit, and world around world, until a firmament of millions of suns is balanced by another as great, and all go sweeping together around some mightier centre. Thus suns whose light has been millions of years in reaching us, are all rushing as if driven by hurricanes of infinite power, round some mysterious electric centre still mightier, still more remote, which sends out its exhaustless electric forces to marshal the constellations of all space.

Thus, all the way up, through moons and planets, suns and systems, and multiplied universes, the whole immensity of worlds is yielding obedience to some far remote and mighty Power; whose mysterious source we cannot find, whose living presence is everywhere, whose supreme authority is felt in every atom of earth, every fiber of a living body, and every impulse of a human soul.

Yet in all this labyrinth of boundless creation, there is no apparent jar, no collision, no falling out of the ranks, no discord or blighting chaos. The vast earth hangs upon nothing in empty space, but the invisible arms of electricity. It sweeps around the sun a thousand times faster than the swiftest railroad train ever flies; it leans upon the plane of its orbit as a racer leans upon his path as he runs, and if it should lean a little more or a little less, or break over its unfenced track, this vast house of the living would become the sepulture of the dead.

Science, as if afraid the telescope would make skeptics of us all, brings the microscope to its aid and turns our attention from the inconceivably great to the inconceivably small. It shows us that the worlds below us are as infinite as those above. Having dazzled our eyes, and bewildered our minds, with the infinite blaze of countless suns and worlds, it shows us millions of perfectly organized beings in a drop of water.

Our earth supports fifteen hundred millions of human beings, yet there are living creatures so small, so numerous, that it would take eight hundred millions of worlds like ours to contain a human population equal to the number of those creatures that by electric energy can live and move in one cubic inch of space. Some of these inconceivable, small creatures multiply at the rate of one hundred and seventy thousand millions in a hundred hours, and every one of them a tiny electric machine. There are creatures so minute that millions sport in a raindrop, and suns so vast their light is a thousand times greater than our noonday. Thus, we are lost in contemplation of the infinitely great and the infinitely small,—the visible and the invisible,—the mystic powers of the universe, the cosmic forces of nature, the occult wonders of science, the perpetual motion of atoms, the continuous sweep of worlds, the swift flash of electricity, the quick, invisible touch of magnetism, the vitalizing glow of life, the

etheric eternal essence of the soul. The greatest of these is the intelligent eternal spirit of God and the intelligent eternal spirit of man. And the next greatest is the wonder-worker of the universe; the right hand of the Almighty; the tongue of the Spirit; the word of Omnipotent power, that swings the suns and worlds in their orbits, and balances the constellations; the perpetual motion of the universe, or that which produces it; the mysterious cosmic forces of nature; the invisible essence of Deity that emanates from the creative spirit; the light and heat of suns; and the harmonious energy of the universe,—electricity.

CHAPTER II.

THIS THEORY NOT IN CONFLICT WITH MODERN SCIENCE OR THE MOSAIC COSMOGONY.

It will be seen that the foregoing system of cosmogony and philosophy, does not conflict with modern science, nor the Mosaic account of creation as best understood and accepted.

It is neither spiritualism nor materialism, but in many respects both. Each having their allotted spheres and functions, and working in harmony together, giving unto matter the things which belong to matter, and unto spirit the things which belong to spirit. It does not detract from the wisdom and power of the Almighty, but points out the wonderful machinery by which His law is promulgated. It does not take away spiritual influence, but shows the agency through which it works upon matter. It does not make matter a delusion of the mind, but a real substance tangible to the senses, and the foundation of human experience.

It does not undertake to eliminate any of the great truths of the Bible, but accepts them as best understood in the light of modern knowledge, and proclaims there is no conflict between religion and science. That both are sciences, one of the spirit, the other of matter. Professor Felix Adler gives a scientific definition of religion when he says "it is the relation of man to the invisible reality." If religion has changed in the various ages of the world, the same may be said of all other sciences, and no science has made greater progress in modern times than the science "of man's relation to the invisible realities." When man realizes that he has a soul which is the real man, he has an ideal something

that physical ailments cannot touch. Religion is that something which sustains, redeems and consoles man in time of need. While this sustaining power is invisible, it is none the less real, and as all power is invisible it is not remarkable that spiritual power should be so.

As there is invisible matter, invisible electricity and magnetism, and all the forces and energies of nature are invisible and mysterious, we should not discard spiritual power and potencies on that account.

In this age, inquiry and research are both persistent and aggressive. From Arctic to Anarctic Ocean men seek to snatch from unwilling nature the hidden mysteries of her wonderful birth, and incomprehensible destiny. They have explored tropical forests, scorching deserts, frozen seas, and trackless wastes of icy waters, penetrating where the restless foot of man never before trod. They have pointed their mammoth telescopes with the inquisitive eye of genius upon the dark shadows of the bending heavens, and made them luminous with new-found suns and worlds, until now science claims to have reached the bounds of the universe. They have explored the vast realms of knowledge, and brought countless trophies to the temple of science, till the century now closing has reached out and grasped marvelous and infinite mysteries.

Not alone in the material world is this true, but the search-light of scientific inquiry is penetrating the mystery of soul life, and bringing out the spiritual entities of existence.

It is well said by another "the impossible of to-day becomes the possible and approved of to-morrow. The fairy tale of yesterday is the scientific discovery of to-day. Each decade knowledge turns and gazes backward in astonishment at the mountain of dogmatic ignorance she has climbed." A few years ago the Society for Psychic Research would have been regarded as a mere collection of visionaries whose

credulity would furnish food for laughter, but at the present day the association is generally acknowledged to be quasi-scientific. The same may be said of theosophy, Christian science, occultism, hypnotism, and mental telepathy. All these have their foundation in some organic truth, spiritual or material, as yet imperfectly understood.

It is the duty of science to recognize all established facts in the physical and spiritual world. It is by gradations we ascend to the altitudes of knowledge. A fact ascertained here, a truth established there, and the structure of human knowledge grows into a perfect temple of beauty and sublimity. Shall we reject the material part, and say with the spiritualist, all "matter is a delusion," thus discarding the granite foundations of human experience, and the proof of our five senses? Or shall we go to the other extreme, and with the blindness of the grosser senses, say, "matter is everything, and intelligence is the result of material organism"? Thereby denuding the body of a soul, and the temple of knowledge of its Corinthian pillars, glittering dome, and the goddess of reason that sits enthroned thereon.

Shall we have a temple of unmeaning hieroglyphics empty and tenantless, mouldering back to nothingness; or one of glittering beauty, tenanted with eternal spirits, bright and warm with the fires of enduring thought, resounding with inspiring music, glorious in the pictured dreams of eternities and crowned with the beatitudes of unfading joy?

Which shall compass the destiny of aspiring humanity? Shall the dreamer be less than his dream? Can the God of hope give hopes never to be realized? Cannot the aspiring creature attain the aspirations of his nature? Must the flower remain in the bud, the fruit in the seed, the tree in the acorn? If so, then is God and the universe a failure, for the laws of spiritual being and growth are in accord with the laws of physical nature, which demands growth, progress, eternal existence, and eternal activity.

Surely as Moses says "in the beginning God created the heavens and the earth," and created man "a living soul." Are not the yearnings of affection, the hopes and aspirations of that soul a proof and prophecy of a glorious future when all these shall be realized.

Moses says man was a special creation. Science so-called says he is only the growth and development of a protoplasm, a primordial cell, a jelly fish, a monkey. I accept Moses. Moses says he was formed from "the dust of the earth," science says the same, and affirms that all things were made from the dust, the grass, the animals, the fish, and the monkey. Moses says "God breathed into man the breath of life and man became a *living soul*." The "living soul" constitutes the man, and what man became, man is. This was the special creation, in the spiritual image of his maker, that Moses described. Science treats only of the body, and takes no cognizance of the soul. It now accepts the statement of Job, "all flesh is grass" as a scientific truth. If my position is correct that all matter is one matter, what does it matter whether God took a developed mammal or a monkey, and transformed him into a man, and breathed into him "a living soul," or whether he took the dust of the earth from a clay bank, or a dunghill, and shaped a man and gave him a soul, or spiritual body? The substance of his body is the same, and yet he is a special creation. There are no more monkeys like him. There are no monkeys with living intelligent souls, therefore man *must* be a special creation. Science has failed to discover or produce any monkeys like him, or any that could possibly be a connecting link. For several decades it has searched the world over, for the "*lost link*," but it has not been found, and never will be; because it does not exist, and never did. So the Darwinian scientists should surrender to Moses, as to the special creation, and as to what constitutes man. Now Moses does not say how long God

was in making man, or just how he made him. He may have made his body by a long period of evolution from a primordial cell to a vegetable pulp, and from that to a jelly fish, and from that to a mammal or monkey, as our Darwinian friends claim. And there is much good reason to believe that all vegetable and animal forms of life from the lowest to the highest, have been gradually evolved from a few species as shown by Mr. Darwin with great research and erudition. The evolution of the fish and birds, of the mammal, and the horse, and horse's foot and limbs, the growth of all animals from an egg, and the growth of man from a similar egg, where during the embryonic period in the mother's womb he passes through all the evolutions of animal life, from the spinal column of a fish to the head and limbs of the mammal,—all tend to confirm the Darwinian theory of the evolution of man's body from the lowest animal life. But this does not prove all they claim. It does not prove that man is descended from a monkey, or is a developed mammal. God in his wisdom, is economical in his development of animal structure, as well as stellar structure; for the stars, suns, and worlds, are all made after the same pattern and governed by the same laws. Why should he take the dust of the earth and make a new animal form or structure, when one had already developed from the growth and evolution of ages, needing but comparatively little change and improvement, to be suited for the body of man, which is the temple of the soul, and the temple of God. How much wiser then is God to take a perfect mammal evolved from the ages, stand him erect, shape his head and limbs, expand his brain, give him the organ of speech, and breath into him "a living soul," a spiritual body, and make him a spiritual atom of his creative Deity, and Father Spirit?

I do not say that God thus made man, I do say that man's body may have been evolved from the lowest order

of vegetable and animal life, and still man is not the descendant of a monkey or any animal; but is and of necessity must be a special creation of Deity. That it matters not how man's body was made, as all matter is one matter, and it is no more humiliating to man, that his body should be formed from a monkey, than that it should be formed from red clay, black mud, or a dunghill; the electro-chemical purifications of nature, make the fairest, most fragrant flowers; and luscious fruits spring from such a source. The difference is Darwin follows the dirt, and Moses follows the Deity in man. Darwin was hunting for bones and tissues, horns and hoofs, hairs and tails; Moses was telling how by a special creation God made man greater than the animals, and "gave him dominion over them." How he made him "a living soul," a part of Deity. According to my theory then that all spirit is one spirit, if man has a soul or spiritual body, he is an atom of the Eternal Spirit and I agree with Moses that when man dies his body goes back to the dust, for "dust thou art and unto dust shalt thou return," but, "*thy soul shall return to God who gave it.*" So modern science, and the Bible fairly understood do not disagree as much as many so-called scientists endeavor to believe in regard to the creation of man. And moreover Darwin never claimed that man was the descendant of a monkey.

Neither Darwin, nor any other responsible naturalist ever said that "Men were descendants from monkeys." He merely pointed out that it was probable that man and monkey might be descended from the same ancestral stock; which is quite a different thing to saying that one is descended from the other. His friends and enemies have both misrepresented him, for in his great work on "The Origin of Species," Mr. Darwin simply traced the growth and evolution of vegetable and animal structure and forms; and showed their similarity to each other, and to man; and

from which he concluded there were few species, or original progenitors. And instead of claiming that all animals were descended from the same original ancestors, he came to a very different conclusion which he crystallized into the following language at the close of his most valuable book, "I believe that animals are descended from at most only four or five progenitors, and plants from an equal or less number."

Darwin was a true scientist, a benefactor to the world, and not devoid of religious feeling, as the following quotation and his approval thereof from his book clearly shows. "A celebrated author and divine has written to me that he has gradually learned to see that it is just as noble a conception of Deity to believe that he created a few original forms, capable of self-development into other and needful forms, as to believe he required a fresh act of creation to supply the void caused by the action of his laws."

God is economical not only in the material used, but in the simplicity and uniformity of the patterns of his visible creation. The earth, the planets, and all suns and stars, satellites and asteroids, meteors and comets, are round or nearly so.

All hail, rain and dewdrops, vegetables, fruits and flowers are round or nearly so, and so are all the orbits of the heavenly bodies. All trees, shrubs, mountains and hills are elongated circles.

All animal organism possesses a head, body and limbs; the limbs of the fish are converted into fins, and the fore-limbs of the bird into wings because of their needs and environments. The fur of animals, the hair of man, the feathers of birds and the scales of fish is the same substance diversified to accord with the nature of each. All vegetable and animal life is sustained by breathing an atmosphere of electrical life and energy.

Nature follows simple patterns of great similarity, and

has great uniformity in her diversified forms. She is not only economic in the forms she uses, but in the substance. She makes one matter perform the offices and functions of all matter, and makes all things the product of one etherial atom. She is so economic that she has made the atoms which now compose our bodies, a part of the bodies of thousands of men and animals, trees, grass and flowers, through all the ages of the unknown past. She has floated them in the air, exploded them in volcanoes; swept them with cyclones, shot them from the sun, buried them in the earth, scattered them in the dust; and then given them new sensate life in our ever-changing bodies.

Each day as we look up to the sun there are invisible atoms above us and around us that will be a part of our bodies ere another day. So that we are in kinship with the universe and a part of its ever-changing mysteries. A part of the atoms in our body to-day will be in earth and air, shrub and flower to-morrow, and daily, hourly, continuously, are we blending and intermixing with the universal elements of nature.

This being so why should we fret or worry at the seeming humiliation of having a vertebra like a fish or a giraffe, head and limbs like a chimpanzee or gorilla; and the general physical contour of an anthropoid ape? It makes us neither better nor worse that the Almighty following the economic results of his law of evolution through the previous ages, should accept the types of physical organism he had thus created; and by developing, remoulding and perfecting it, from the dust, or from the then best living types, in a day or by slow process, make it a fit temple for the indwelling of his spiritual image.

The important fact is he created us in his own image,—which was a spiritual creation, and made us the sons of God—the offsprings of Deity. This is the creation of which Moses spoke, and which physicists ignore with the blindness

of worms which will crawl only in the dust, and are too blind to see the light. If as science now practically demonstrates our bodies are a part of all the universe; and their atoms have been in sea and air, sky and earth, bird and beast, man and dust, a million times before we used them; and will be a million times after; why should we wrangle over the similarity of their structure to the lower animals? What does it matter, and wherein can we impugn the wisdom of Creative Deity? The fact that Moses states is the all-important one—God breathed into man his eternal, intelligent spirit, and made him a God over all the animal creation, and “gave him dominion over the earth.”

The gulf between man and animals could never have been bridged by evolution. The fixity of brute instinct and the steady advance of man prove this. The simplest original types of animals still exists, with rudimentary organs.

With reference to the creation of the world, there is really little difference when fairly understood, between modern science and the Mosaic account of the world's genesis. When God said, “Let there be light, and there was light,” all modern science teaches that the light was the glow and flashes of electricity illumining the void of space. The present knowledge of electricity, affirmed by science, demonstrates that with light came all electric energy, as manifested in heat, magnetism and all vital forces. And that these forces are the creative governing forces of the world and the universe, and which may be epitomized in the all-diffusing, illuminating mystery of light. Light and its accompanying electric forces were the beginning, initial movements of creative potency, the first essentials to life and all life forms, and to the destruction of chaos and darkness, and was instantaneous in its operation. Moses must have been inspired, for electricity was then unknown, and it is the only thing in nature that is instantaneous. The days of creation in the Mosaic account are understood to mean indefinite

periods of time and should have been so translated. The order of creation therein is approved by modern science, and all agree as I believe with the electric theory.

The Bible recognizes the difficulty of comprehending God, for it says, "Can man by searching find out God?" I answer no, he can be known only by his manifestations. Neither can modern science by dissecting and analyzing man's body discover and analyze his soul,—the God within him. It is known only by its manifestations. (Not even the wonderful X-rays can bring forth the lineaments of his invisible spirit.) Even the electricity that produces those rays and reveals the coarser elements of bone and brain and structure are invisible, and naught in science can catch the refined etherial structure of the soul. Yet it is there as certain as the eye sees, and the ear hears, and the mind thinks and reasons, and vitality and intelligence exist. Like its messenger and servant, electricity, it is known by its phenomena or effects. The Bible says "God is a spirit."

Have we any microscope that can reach spirit and make it tangible to the senses? Because we have not shall we ignore, and deny there is such a thing? We cannot analyze or understand electricity, heat, light, or life, or invisible matter; shall we therefore deny their existence? We know them only as we know spirit, mind or soul—by their manifestations. Moses and the Bible is right, flesh and bone, tissue and muscles, which consist of what we eat, drink and breathe, which are thrown off daily, and entirely changed every seven years; is not man but the "living soul" within him, that is man. It is the immortal vigor of our souls that makes the man. It is the God within us which makes the real man.

It has taken modern skepticism, agnosticism, and modern evolution to proclaim a law and ignore the lawgiver to proclaim like "the fool in his heart, there is no God," there is no soul or spirit, there is no heaven,—there is no hereafter

That creative wisdom formed man,—this wonderful complex organism, to tread the earth and view the stars, to weigh suns and measure worlds, to till the soil and sail the fleet, to build homes of beauty, and temples of grandeur, to revel in the delights of poetry, and song, eloquence and art; to soar on the wings of fancy, and dream the glorious dreams of heaven and immortality; to wind the tendrils of affection around those beloved, to let the heart go out in fondest dreams of reunited joy, and feel hope's banners wave like the benedictions of a god. And *then*, in a brief space, this wondrous miracle of breathing life and joy, and love and heaven, to crumble into dust, to sink into nothingness, and dark obstruction forever. Great God! can this be possible? Surely a demon from the lowest depths could never utter such a horrid thought, and so accuse Thee of a baser, darker crime, than it were possible for man or demons to conceive or execute?

Oh! if in all God's countless spheres,
There is no heaven where souls shall come;
And on love's bosom free from tears,
Be welcomed when the pulse grows dumb;—
Where lotos leaves, and balm are pressed,
To soothe the weary, troubled breast;
And souls from grief and pain are free;
What groveling—thrice-mocked dupes,—are we?

CHAPTER III.

ALL MATTER IS ONE MATTER, AND MATTER HAS NO INTELLIGENCE.

CAN any man with the swelling tides of reason, memory, and imagination, surging through his conscious being, say I have no spirit, no soul,—this arm, this head, this heart, this flesh—this is all of me?

All is matter, dust,—an organism of my mother's milk, of bread and beef, water and air, blood and bone, muscle and tissue.

These, and only these constitute myself, the thinking ego, the emphatic I,—the sum and essence of all this thrilling, breathing, living entity of my existence. And all must crumble to the dust from whence I came, and from whence received my food and sustenance. That I must return to a handful of earth, a blade of grass, a grain of wheat, a drop of dew, a vapor floating in the silent air.

“Great Cæsar dead, and turned to clay,
Might stop a hole, to keep the winds away.”

This is true of matter, of the ever-changing material body; but “dust to dust,” was never spoken of the soul.

“God is a spirit,” says divine revelation, and adds “in him we live, move and have our being.” If we are only matter, how can we “live, move and have our being” in spirit? Is it necessary to prove there is a god any more than to prove there is a world, for the existence of the world shows conclusively there is a creative god. Is it necessary to prove man has a soul, any more than to prove

he exists, and has reason, perception, and intuition? Each man has the proof of a soul within himself, and needs no external proof.

This is self-evident. Man knows within his own consciousness, that this reasoning soul power is not in the food he eats, or the air he breathes, or the organism that constitutes his body, for parts of these are thrown off daily in the waste tissues of the body, and possess no such qualities or elements, either before or after assimilation. He knows reason, intelligence, hope, affections, are not material attributes, but spiritual entities.

Whence come these, then, but from the immortal spirit or soul of man, which is a part of the eternal spirit of God? To deny this is to put ourselves in the position of the man who said he would believe nothing he could not see. Thereupon he was informed he must deny he had a spinal column. He then changed his position, and said he would believe nothing he could not understand. Thereupon he was informed, he must deny that he was living, for the mystery of life was not yet understood. He must deny that the sun shines, that light, heat, life, and electricity exist, for none of these were understood.

We reason of the material world, thus: The fact that there is a creation, necessitates a creator. As there is design, there must be a designer. Order and harmony in the universe proclaim the reign of law. "Law is a rule of action prescribed by a superior power." Where there is law there must be a lawgiver. A lawgiver must have intelligent purpose and power, to adapt means to ends, cause to effect, results to a definite purpose. Growth, progress, evolution is not God, but the law he has impressed upon matter. The source and foundation of all law is in the omnipotent wisdom of creative Deity. Order and harmony in the universe show his purpose is beneficent, and the divine oracles proclaim: "God is love." Hooker has de-

clared that no less can be said of law, than that "its seat is the bosom of God; its voice the harmony of the world."

God is personal in his attributes and dealings with his spiritual offsprings, but impersonal as lawgiver and creator of the physical universe. And it matters not whether he takes direct control of all things, or has wound up the great machinery of creation and set it going to execute and evolve his will through natural law; to construct such complex and wondrous machinery, detracts nothing from his godly attributes, and shows his purpose is beneficent.

May we not reason in like manner of spiritual things. Thus; God is a spirit and made man in his own image, therefore man is a spirit. God breathed into man "a living soul," therefore man's soul is a part of God. Man has a spiritual body because God is a spirit, and man is like him,—is his spiritual offspring. Man has reason, thought, imagination, because these are attributes of mind, soul or spiritual body; and not of matter, in the very nature of things.

But the scientists, so called, will not recognize spirit. The dogmatic physicists take cognizance only of material things, which they can touch, handle, and analyze. They blindly refuse to look back of nature, to nature's god, and persistently ignore the invisible realities. They deny the existence of spirit, or soul, because they cannot see it with the eye, telescope or microscope. They might as well deny thought or reason, electricity or magnetism for the same reason. They find by the use of the magnifying glass thousands of animalcule in a raindrop, and millions of bacilli floating in the air, which their predecessors would have denied with incredulous horror and disgust. Could they increase the magnifying power of their instruments until they could give the lineaments of spirit or soul, they might, like Elijah, behold "a legion of angels."

But physicists are not allowed to have an imagination;

like the ostrich they hide their head in the sand, and refuse to believe there is anything but sand because there is nothing else visible or tangible.

They live in glass houses and should not throw stones at religion or spiritualism, or theosophy, or Christian science, or any science that recognizes soul or spirit. Since they promulgated the theory that the earth was flat, that it rested on the back of Atlas, or a huge turtle, or an elephant. That it was made from the white and yellow of an egg, that the sun revolves around the earth as it seems to do, and a thousand other absurdities, now exploded, they should not charge religion with incredible beliefs, changes and inconsistencies.

Science has been dubious and changeful almost every decade, while religion has been largely the same for almost two thousand years. Science in the past has championed as many absurdities as all the religions of the world, and should not be too proud of its recent discoveries and attainments.

But to the question, is all matter one matter, and has matter intelligence? Science virtually approves the fact that all matter is one matter. It claims that the movements of the atoms make the difference in the functions and appearance of all material things, and all are produced from the etheric atoms of space. That these movements cause the hardness of iron and granite, the softness of pine and feathers; the toughness of the hide of an elephant; and the tenderness of the flesh of a child; and that all are from the same etheric atoms, the same dust of earth,—which is the mother of us all. So true is this, that temperature affects the activity or movement of atoms which cause great changes in their appearance and condition. For instance, the particles of a gas are so active they fly asunder, reduce their activity by reducing their temperature, and they assume the liquid condition. Make them

still more quiescent and a solid results, and still more quiescent and you have the hardness of iron, granite, coal, and all metals, which undergo all these processes.

Thus, the volatile gases and atoms of space were cooled and compressed into suns and worlds, and all existing material things are composed of the same atoms, the same matter, and all matter is one and the same matter. This is apparent as to water which composes four-fifths of the human body, it is a vapor, a liquid, a solid, a crystallized mineral according to the activity of its atoms. So the human body is changeable as the vapor or air it breathes.

Has matter intelligence? Ah! here is the stumbling-block of the physicist, the materialist, the one-sided scientist. If it has, as they claim, then spirit or soul is useless, and unnecessary, and only the material and physical exist, and spirit is a delusion and a myth.

If matter has not intelligence, whence comes reason and intuition, the attributes of the soul? They cannot be found in matter in any of its atoms, elements and changes, and is only manifested in the highest organic form, known as man.

Mr. Edison, the eminent electrician, took a one-sided view of things, when he stated in a recent interview published in a leading New York paper; "Atoms have intelligence, and the intelligence of a man is the sum of the intelligence of the atoms that compose his body." This is materialism gone mad. It eliminates God and all spiritual power and influence from the universe. It deifies matter, and makes man's body a little god of the earth, full of irresponsible knowledge, soon to dissolve into dust and nothingness. It makes animal organism everything, conferring upon it all spiritual attributes, which in the nature of things it cannot possess.

If there is intelligence in the atoms of our bodies, then there is intelligence in the air we breathe, the water we

drink, the bread, meat, and fruits we eat which compose our bodies. The waste atoms we throw off daily by the ounce or pound, and scatter in the dust and air, must have this same intelligence.

But even the erudite Mr. Edison has not been able to demonstrate this appalling statement. He can thus speak, when he can throw some of these waste atoms from his body into his wonderful telephone and phonograph, and cause them to give signs of intelligence.

But it is impossible. Matter cannot have intelligence and reason for these are spiritual manifestations. Atoms have affinity and selection, which is due, as I believe, to the electric currents that attract or propel them. All movement of atoms and worlds according to my theory, are created, impelled and controlled by electric magnetic attraction. As all matter is one matter, and the vibratory vortex or revolving motion and speed of its atoms cause the hardness of iron, the softness of pine, the tenderness of an infant's flesh, and the toughness of the hide of the rhinoceros, the intelligence of one form of matter organic or inorganic should be as great as another. And the larger the body the greater the intelligence, and the elephant and rhinoceros should be wiser than Gladstone, Edison and all the scientists.

The oneness of matter is the recent discovery of modern science. Four thousand years after Job announced the great scientific truth that "all flesh is grass," scoffing skeptical modern thought accepts and affirms it. But because these same skeptical scientists behold the same matter, one day grass, the next day in the body of cattle, the next in the body of man, the next floating in air, or blooming in shrub, tree or flower; they exclaim "wonderful matter,—a speck of dust riding on the sunbeams,—a diamond hid in the earth,—a dewdrop, a fragrant flower, a frisking lamb, a lowing herd, a crowing babe—a reasoning God. Matter is

everything—the material universe is all.” They look no further, they will not gaze beyond. They shout “agnosticism,—we know nothing, or pantheism—God is the universe.”

They do not recognize that back of all these material changes is spirit, and its right arm electricity, weaving its wonderful fabrics, working its marvelous miracles. That matter is but clay in the hands of the potter, and God, the Eternal Spirit, is the potter, electricity and magnetism the hand with which he stirs and moulds the wondrous products of visible creation.

Science has asked, but has never answered how are the movements of atoms, and diversified forms of matter, produced and maintained? I answer, by electricity in some of its forms.

These changes and functions are not wrought by intelligence in matter, but by the Spirit of God propelling these forces and currents upon matter by direct will, or promulgated law. Otherwise, if all matter is one matter which science now affirms, and atoms have intelligence, the greater the amount of atoms the greater the intelligence. Then the mountains, the hills, and the elephants would mostly absorb it. The large man would have great advantage over the small one. But, this is not true, size or amount of atoms in the body of man or animals, have little or nothing to do with their intelligence. Intelligence does not consist in the atoms composing a physical organism.

The atoms in the body of a man are the same as those in the hog, sheep or cattle which he eats. Why have not hogs, sheep, and cattle the same intelligence as man? They eat much the same food, and breathe the same air. Does something in man's organism assimilate a higher order of pabulum, appropriate a more refined etheric substance to make the grey matter of the brain—to evolve thought—power, reason and intelligence? If so, then there is some-

thing more in man than the mere animal, than mere matter itself, than mere selection and affinity of atoms.

If matter has no intelligence in all other forms and functions outside of man's body, how can it be possible to have it in man's body, unless something additional is added to it?

What is this something? We claim it is mind, soul or spirit,—a spiritual body that has intelligence, reason, ideality. These are immaterial, spiritual attributes, which cannot belong to matter, because of its ever-varying, changing atoms and forms. Does intelligence belong to organism? No, for organic matter is only the casket, intelligence is the jewel; organic matter is the servant, spirit is the master. Organism is the varying outward form, wasting daily, and soon crumbling into dust. Soul is the inward spirit, the reasoning conscious essence, the eternal ego, the imperishable I am.

Anatomists tell us that every atom of the human body is changed every seven years; and many ounces, and sometimes pounds, are thrown off daily. This being so, how can a man forty-two years old remember what occurred in his youth? And yet, the fact is, the recollections of his childhood, are the most vivid of his life. Can one atom whisper to another in six consecutive changes, what happened in his boyhood? Can all the atoms, whisper to all the succeeding atoms, the story of his life? Do they preserve his bodily autonomy? Do the waste atoms of each day as they pass into dust and air, communicate to those that remain what happened while they were a part of his body? If so, then the memory of atoms are infinite.

The atoms that have been since time began in nebulous ether, in rock, and tree and grass, in the bodies of fish and birds and mammals;—in the bodies of a thousand men and animals through all the æons of the tractless past; burned in fire; exploded in volcanoes; torn by earthquakes;

shivered by lightning; swept by tornadoes; scatterey by cyclones.

If they could remember and tell all these things, they could speak the voice of Omnipotence, and repeat the miracle of creation. They would proclaim the pantheism of the universe. Man would then need no inspired revelation to tell him of the cosmic forces, and the process of creative evolution. Every atom in his body would whisper it to him in the "Still small voice" of Deity.

Ah! but this is an impossible, unreasonable hypothesis, even if it is the ultimate reasoning of an Edison. It deifies dust to the dignity of a god, and makes this changeful fading universe a fast revolving kaleidoscope of unmeaning figures, and fateful dreams. A panorama of swift moving pictures like the gorgeous rainbow, and as evanescent; to fade into mysterious silence, and nothingness.

All analysis of matter demonstrates that intelligence is no part of its properties, and is independent of its atoms, organic or inorganic, except as a means or function through which to manifest itself to external things. That intelligence lingers when the body is wasted to a shadow, and has few atoms to confer their aggregate intelligence. What then becomes of Mr. Edison's theory, "that the sum of the intelligence of the atoms of the body is the sum of man's intelligence"?

Carry the argument farther Is it a matter of atoms, or organism? Cut off the legs, the arms, the tongue, is there any less intelligence? Paralyze the body, but leave the right hand power to move, will it write less intelligently? Waste the body, starve it, reduce it to a skeleton, burn it to a crisp, but leave the vital parts, and still it does not lose intelligence. No, as long as the spiritual tenant has an arm to raise, a mouth to speak, a tenement in which to dwell, it will show forth its conscious intelligence. Often the more you reduce the atoms of the body the brighter the spiritual

intelligence will shine forth. And the weakest bodies often have minds that soar to the loftiest intellectual altitudes.

Mr. Edison, like all materialists, claims to recognize only the material visible substance of man's body, which can be seen and analyzed by microscopic inspection. According to them this is man—all there is of man. Yet in that microscopic analysis, they cannot see the electricity that permeates every atom and gives it vitality. They cannot see the air that fills the lungs and gives life and vigor to the body. They know however they are there, and that they are absolutely essential to life—they know this by their manifestations—yet they are invisible and intangible. This being so, why should they discard the soul or spiritual body, which illumines and is the intelligence for the whole organism, because they cannot find it with the microscope? Neither can they find electricity or breath, or carbon or nerve force, yet they do not disbelieve or ignore their existence. Here is a palpable inconsistency. But they may reply, that they find these out by another analysis or process—because the air we breath has been analyzed, and its component parts ascertained, and its necessity to life established; the same is true of electricity; its presence is known not by visible proof, but by invisible manifestations.

A man may walk up and down the floor of a room covered with a rich Brussels or tapestry carpet, and store his body, already filled with electricity, with such a surplus of this invisible substance that he can turn on the gas and light the gas by striking his finger against the gas tip—this makes a flash of electricity with a loud explosion that ignites the gas. This is a common experiment. In the parlor of a certain hotel of which I have knowledge, the chandeliers were seldom lit in any other way than by an electric flash from a human body; the attendant and others ignoring matches, as a few sliding steps across the carpet were sufficient to enable almost any one to do this. This

illustrates how abundant electricity is in the human body, and yet it is not visible to the eye or the microscope, and is known only by its manifestations. The spiritual body is known in the same way.

Modern science has discovered what constitutes every atom of the human body, and found them the same atoms that compose the universe. The same as floats in the air, and rides on the sunbeam; the same as compose the dust of earth, the tree, the shrub, the flower; the same as constituted the flesh of fish and fowl, and man and animal. And that all matter is one matter.

That the difference in matter is not in its substance, but in its molecular action which gives it varied form and appearance.

That the gases and atoms that float in invisible ether, are the same as those in the tree and plant; in the water and dust; in the obdurate iron and all metals; in the flesh of man and beasts; in the body of suns and worlds. There is but one matter, and a large part of all matter is invisible. "What can it be possible," says the materialist, "that matter is invisible? We believe only in the visible and tangible substances." Certainly I answer, much of the matter that is visible to-day often is invisible to-morrow. The houses that burn, the people and cattle who die, a large part of them are soon reduced to invisible matter, and found floating in unseen ether and gases. In Chicago, in the great fire, in a few hours thousands of massive, strong, substantial structures, covering hundreds of acres, were reduced almost entirely to invisible matter, for the heat was so great that even stone and bricks and granite were melted and reduced to their original invisible substances. The ancients would have thought this an absolute loss to the world; but modern science has discovered that "matter is indestructible." That it changes its form, but does not lose its existence and identity, and upon this knowledge all modern chemistry is

established. Not one atom of matter has ever been destroyed since the world began; therefore man has immortality in the atoms of his body, this the materialist must grant, but it is not enough.

What profit or satisfaction is that to a reasoning mind,—to an aspiring intelligence? The atoms of man's body belong to him only while he uses them; they have been a part of the bodies of a thousand men and animals before him, and will be a part of millions of them after him; they have been in trees and grass, flowers and shrub, earth and ocean, air and water through their ever-varying curriculum of endless changes, and indestructible progress of immortal atoms.

But this transient possession of varied and continually changing, fleeting and evanescent atoms is not enough to satisfy a longing human soul. But it is a strong argument for the immortality of an aspiring human spirit. If the Almighty has so arranged the universe that not one atom of changing, unreasoning matter shall ever be destroyed, would he not certainly give immortality to that invisible, controlling spirituality which commands matter and weighs suns and worlds. Which dreams ever of hope and heaven and life beyond the transitory scenes of time; which reasons from now to the hereafter, from the creation to the great Creator; and aspires to knowledge, and wisdom, to goodness and truth and to God.

What is life without aspiring,
What is age without its youth;
What is rest without the tiring,
What is fancy without truth?
What is man without the dreaming
That divinest dream of all,
That life's flowers that fade in seeming
Bloom where shadows never fall?

Did Alexander Pope with his feeble ninety pounds of body,

show less reasoning power than the huge Samuel Johnson, or the frail Alexander Stephens less intellectual power than the ponderous Robert Tombs? Size or quantity and quality of atoms in the body, has cut little figure in the intellectual progress of men, and often the smallest and weakest have outstripped the physical giants. What then becomes of Mr. Edison's theory, and that of all the materialists? According to their theory if you cut off a man's leg, you cut off so many atoms of intelligence. Cut off another leg and you cut off one-third, then both arms, and you have cut off one-half his intelligence. He should then be a gibbering idiot, but we know he is not.

But Mr. Edison may claim that intelligence is not in the arms and legs, but in the brain or vital parts. If so, then he must destroy his whole theory, that atoms have intelligence, and admit that only some atoms, or certain atoms have intelligence. Then he must explain why some have, and some have not, and fall back on something beyond and back of all matter that makes the difference. And whatever name he gives it, he might as well call it soul, or spirit, for it performs the offices ascribed to this invisible potential entity.

If all matter is one matter, if any atom of matter has intelligence, all have; or all matter is not one matter. If the grey matter of the brain has intelligence in man, and not in the horse, cow, hog, or monkey, then there are as many kinds of matter, as there are animals or vegetables. Yet all animals eat grass, and similar products of the earth, does digestion and assimilation change the nature of the atoms? This is not likely, for they came from the same substances, and continually revert back to them. All came from the same earth and air, and re-solve themselves back to the same and have constituted the bodies of a thousand vegetables, men and animals through all the cycles of the ever-changing, measureless past.

We say all matter is one matter; how can we make this statement more clear and definite? Is it clearer of comprehension to say, all visible things, all suns, stars, worlds, all vegetable and animal forms, all metals, rocks and gases are composed of the one invisible molecule or atom, which floats unseen through all space, and constitutes the earth-dust and star-dust of all worlds and suns.

That from this one and the same identical atom or matter all material, organic or inorganic things and substances are formed and composed. That in the beginning all these visible material things were in a state of solution, or diffusion through all space—scattered in the form of these invisible atoms, and that neither suns nor worlds nor their products nor inhabitants then existed.

Then, when the voice of creative power broke the silence of the dead eternities, these atoms, by the vitalizing touch of electricity, with its manifestations of light, heat, and force, began to evolve themselves into suns and worlds, and all their varied forms of life and growth.

That from myriads of one and only one atom or form of invisible matter, God by the electric currents and magnetic forces of his measureless power, made all the diversified products of his visible creation.

That man's body is no exception to the universal law, but is formed from the dust of the earth, the same as the grass, the trees and all vegetable and animal life, and all are the products of this invisible atom, molecule or star-dust.

That electricity in some of its forms by its marvelous motions and properties produces the wonderful variety of all material and visible things and substances, creates all growth, sustains all life, and holds all things in their allotted place. That it is the invisible hand of Deity that upholds and controls the universe.

Can any one ask for greater detail or minutia to show that all matter is one matter. Let him consider the rapid,

invisible changes and mutations of the most common forms of matter.

Water comprises a large part of the earth and atmosphere, yet it is in a continual transition from invisible vapor, to a fluid form, and often to a crystallized mineral; but it is the same matter or substance. It changes form, solidity, appearance, visibility. It is invisible ether, it is vapor, steam, fluid, solid ice; and yet the atoms are all the same. It constitutes three-fourths of man's body, and two-thirds the earth and atmosphere. There is an invisible ocean in the air, but we look up through the bright daylight and can see no indication of this invisible ocean; but in a minute thereafter, the electric current may let it down on the earth in a deluge of rain, in starry snowflakes, or in solid hailstones bringing death and ruin in its path.

Take one of the elements of water oxygen, which Professor Fiske says, "makes one-fifth of the atmosphere in volume, eight-ninths of the ocean by weight, and forms one-half of the earth's solid crust, besides making the fire burn." What marvelous and diversified forms it takes in water, in stone, in metal, in the atmosphere. Yet oxygen was only discovered 1774; and the ingredients of the sun and stars were not ascertained until 1861 through the invention of the spectroscope. And it was found the sun and stars were composed of materials "to be obtained at any drug store." So that all worlds, substances and things in this visible universe are made from the same matter, and all matter is one matter. Even the solid iron and the inflexible steel that spans bridges and upholds massive buildings, can be reduced to flowing liquid and invisible vapor, and float on the fleecy cloudlets of the azure sky. And the same substance of which that iron is composed flows in the blood of every living creature, paints the crimson sunset, and flushes the ruddy cheeks of health.

CHAPTER IV.

THE ATTRACTION OF GRAVITATION IS ELECTRO-MAGNETIC ATTRACTION.

ELECTRICITY was comparatively unknown until the last half of the present century. It is as yet imperfectly understood, and is but on the threshold of its marvelous utility. The genius of man has drawn the lightning from the clouds and made it his messenger and servant, to do his bidding, and his beast of burden to bear his commerce. But the wonders it has wrought, are as nothing to the miracles it will yet reveal. By it and through it man has imbibed the thought of Deity, and grasped the right arm of Omnipotence to work out the ideal dream of earth's elysian beauty, and perennial beneficence and joy. Doctor Oliver Wendell Holmes expressed a great truth when he said "After all it is the imponderables that move the world—heat, electricity, love," and the Bible truly tells us "the invisible is greater than the visible—the unseen than the seen."

As electricity was unknown when Newton discovered the supposed law of gravitation and cohesion, he could not take it into account in determining why the apple fell downward. Knowing nothing of this wonderful substance, he called the force that drew the apple to the earth the attraction of gravity or weight—the attraction a larger body has for a smaller one. But this depends, as we believe, on electrical conditions, not on size or weight. A large piece of iron or steel does not attract a smaller one unless it is magnetized. Then it will lift tons. And so with all matter. Mr. Edison has recently adapted this principle to separate iron ore from its coarser surrounding dross, using huge

magnets to overcome the supposed law of gravitation. Electro-magnetic attraction takes stronger hold on the heavy iron, and leaves the unmagnetized substance to fall to the earth.

Thus these magnets that in size and weight or gravity are as a pin head to a mountain, in comparison with the largeness and gravity of the earth, overcome the electric attraction of the earth, and wipe out the so-called law of gravitation.

"Why does the apple fall downward?" asks Newton. And he answers according to the best lights of his time, "Because of the weight of the earth which draws it, and," he concludes, "all larger bodies draw or attract smaller ones, and this," he declares, "is the law of the attraction of gravitation."

But why do larger bodies attract smaller ones? We answer, not because of their weight or size, but because as electricity is diffused through all matter, as a rule the larger bodies contain more electricity and therefore draw or attract the stronger. But it is not size or gravity, but the electrical condition that is the measure of power or attraction; size or gravity is a mere incident.

Why does the apple fall downward? We answer, because the electric attraction of the earth is greater than that of the distant sun, and planets, not because of the weight or size of the earth.

Magnetize the apple by a process yet to be discovered, the magnetism of metals is a comparatively recent discovery, then fix your magnets a hundred feet above the apple and it will fall upward a hundred feet as easily as it falls downward ten feet to the earth.

It is this same electro-magnetic force Mr. Edison uses in his huge magnets to draw the iron, that on a larger scale draws and holds the earth in its vast annual orbit of 360,000,000 of miles. The sun is the enormous electric mag-

net, that holds it perfectly balanced and moving in its allotted circle.

Not the size or gravity of the sun controls, but the electrical conditions and magnetic power it exerts. The earth turns upon its axis by reason of this same electric force.

Newton caught a glimpse of this world force, which guides ponderable bodies in their fall to the earth, and which holds the planets to the central sun, confining their paths around the sun to closed circular orbits of definite form, accurate in time measures. But Newton says he did not know or understand this wonderful force he called gravitation. He says "The cause of gravity I do not pretend to know. It is inconceivable that brute matter should, without the mediation of something else which is not material, operate on and affect other matter without mutual contact, as it must do if gravitation be essential and inherent in it. Gravity must be caused by an agent, acting constantly according to certain laws; but whether this agent be material or immaterial, I have left to the consideration of my readers." Says another scientist of this declaration, "These statements of the great discoverer of the occult forces holding the planetary worlds in charge, indicate that he was conscious of having only entered upon the inviting field of discovery respecting those unseen forces that command matter in its ever-changing states."

Newton refers to matter as "brute matter," and having no knowledge of electricity, which is the discovery of this century, he says he does not pretend to know "the cause of gravity," or "whether material or immaterial." And how could he know when this invisible potential agency was not then suspected to have an existence? But how clearly does he foreshadow electricity when he says, "Gravity must be caused by an agent acting constantly according to certain laws."

Who can doubt according to his own statement, and the

discoveries concerning electro-magnetism, that if Newton were living to-day, he would gladly acknowledge this form of electricity, as the real invisible force he discovered, and named the attraction of gravitation.

His great truthful soul would be proud of the wonderful achievements of electricity, its marvelous utility to the race, and its sovereignty over all nature. He would recognize this law of gravity, this occult force which he but dimly comprehended, as the cosmic protean force of the universe, the right hand of creative Omnipotence. Through the acting and reacting impulses of equal currents of energy through intervening space, he would see revealed these electric forces binding all planetary bodies, imparting their grand velocities, and fixing their paths of motion.

He would see the failure of science to classify the imponderable forces of light, heat, gravity and magnetism, as all among the manifestations and properties of electricity.

These forces which with the velocity of light bear the planets upon their circling currents direct the motion of atoms, control the nebulous ether of space, and pervade and encircle the system of worlds that constitute the machinery of the boundless heavens, are all embraced in the potential magnetic word—electricity. And this is the mystic force the genius of Newton discovered and named the attraction of gravitation.

When Newton saw an invisible force back of the apple which pulled it to the earth, he disclosed a new element, a new world more wonderful than the marvels the microscope and the telescope reveal. He saw beyond these a universal power holding atoms and worlds, and fixing all laws of life and motion.

He saw the universe lying in the arms of invisible power, held by the grasp of invisible hands, controlled by waves of invisible force, as intangible as mind, as subtle as thought, as Omnipotent as Deity.

The material, the visible and the ponderable were as nothing in the hands of the invisible and imponderable. A world, a sun, a planet, were as light as a sunbeam to a force invisible and lighter than a sunbeam.

Millions of tons of matter, hard and solid, were as a featherweight to an intangible substance lighter than a featherweight. What a miracle of wonders! And the name of these invisible arms that stretch out through all space like the arms of Omnipotent Deity, and works these marvelous miracles is not gravity, oh! immortal Newton! but electricity. It is not the weight of worlds that draw each other, but the invisible electric magnetic forces, and on these the vast suns and planets recline as on the invisible arms of Deity.

It is imponderable, invisible electricity that holds the grand sovereignty of motion, and evolves all creative work. Matter ceases to be "brute matter," and space ceases to be "a vacuum" when it is pervaded with this electric clothing of light, which leaps into power from the throne of invisible Omnipotence. Its birth is in the eternities, and its home is in universal space. Yet with all its measureless power, and grand velocities, it has neither brain nor hand nor form nor weight,—it is the invisible word of power from the invisible source of all power.

Newton called it the law of universal gravitation, I call it the universal law of magnetic attraction, and electric force.

These are sovereign over matter, and boundless in their possibilities as space is boundless in its measures. They confirm the Copernican system of planetary forces, and make apparent that which Kepler so earnestly sought. The laws of planetary motion are the same as the laws of electric currents and magnets, in their influence over each other.

The electric currents move around the sun and planets parallel to the plain of the ecliptic, and electric currents move round the magnet at right angles to the same. As

the magnetic needle takes its position with poles reversed to those of the earth, the larger magnet, so all the planets take up their position with reference to the sun, the great magnet of the solar system, with poles reversed to those of the sun, and hence the flow of sun currents and earth currents between the two is in the same direction, binding the two bodies in bonds of ceaseless activity and unfailing energy.

The physicist who by battery and insulated wire brings invisible forces to the iron core of the electro-magnet, must note the sovereignty of these imponderable forces over matter. In the magnet the world of sense, and the world of infinite creative potencies are joined together by bonds of an immortal texture; and the Creator and created meet face to face, and here is revealed the presence of the master builder of the universe, propelled by the eternal spirit of the everlasting I am.

"Newton's discovery of the great law of attraction of gravitation," says Professor S. E. Minor, "was a discovery of the law of magnetic currents in their relation to the bodies of matter that have been built up under the working energy of magnetic or elective affinities. From the mathematical demonstration confirming this discovery we learn that bodies attract bodies directly as mass; that is, they attract in organic forms as they attracted in their associate atoms. There is not masked in the created form the strength of a single atom, but such strength is joined with its associate atoms in long working lines of attraction, drawing from the great dark depth of space, elements of virgin matter to increase the body and enhance the strength of the organism.

"Electricity in space may thus be converted into magnetism in bodies, and magnetism in bodies, by disassociation, may be converted into electricity in space. The adjusted balance between electricity and magnetism gives us the dividing line between matter and energy in body, and matter and energy in space. The initial centres of magnetic at-

traction are always foundation points at which creative work begins, and the first group of atoms gathered around such centres are foundation stones upon which all creative structures are built. Toward such centres the lines of magnetic attraction always move laden with virgin atoms of matter as the materials of building; from such atoms selection and rejection under the law of magnetic affinities, asorts the atoms and carries them to their place in the growing structure." Thus we reach the beginning of creation, the beginning of substance, the beginning of material energy, from whence are all the grand results of creation's work. The electric forces and affinities hold all the possibilities of evolving world structures and life forms.

It is the electrical conditions, or magnetic power that attracts, and not size or weight. The earth does not attract as strong as the same amount or gravity of the sun. Neither does Jupiter nor any of the planets. Why? The reason is obvious. Because the sun has more stored electricity or magnetic attraction. Therefore, size, weight, or gravity, has little to do with the force exerted, and does not at all describe or account for it. These premises being established the conclusion is inevitable. I affirm, therefore, that Newton mistook the reason and misnamed the force. The attraction of gravitation does not exist. It is the electric magnetic attraction that constitutes the force intended to be named. And this force and attraction should be called and named what it really is, electro-magnetic attraction.

The same is true of the so-called attraction of cohesion, which is the holding together of atoms of matter. It is also caused by electric attraction and repulsion, by the law of affinity and selection.

Many persons may suppose that modern science accepts the law of gravitation as an established fact, but this is not true. Lord Kelvin, the greatest of them all, in his most recent utterance, is reported as follows :

When Lord Kelvin was asked if he leaned toward the acceptance of any particular theory in explanation of gravitation—that most universal and familiar of phenomena, yet most inscrutable of mysteries, said, with even more than wonted emphasis: “No, no, no, I accept neither theory, I accept no theory of gravitation. Present science has no right to attempt to explain gravitation. We know nothing about it; we simply know nothing about it.” “To convey by words,” says the writer, “the peculiar emphasis and intonation with which that verdict was pronounced would be impossible. It would require hardihood indeed in any one who heard it to attempt an explanation of gravitation until such time as new data shall have come to our aid. A subject about the cause of which, in the opinion of Lord Kelvin, we know absolutely nothing, is not likely to be illuminated by any other person speaking from the basis of present knowledge.

“This of course is far from saying that new data may not come to hand to-morrow or next year, or next century, which will solve the problem. Lord Kelvin, gifted with perennial freshness of imagination, would be the last person to assert the finality of present knowledge.”

It is certainly a salutary check on the egotism of our times, to be told that the wisest living physicist, the man who has been called the Newton of our age, knows as little of the cause why a stone tossed into the air falls back to the earth as the boy who tosses the stone.

If Lord Kelvin, the father of the vortex theory, and the Newton of our age, and other physicists, do not accept the theory of the attraction of gravitation, am I not at liberty to question it, to challenge its correctness, and propound what I deem a better and more plausible one, founded upon what I deem the latest knowledge and developments of electricity? “Where doctors disagree students are free.” Liebnitz accused Newton of introducing “occult qualities

and miracles into philosophy," because of his doctrine of gravitation. Darwin says, "Who can explain what is the essence of the attraction of gravitation?" and then he adds, "No one now objects to following out the results consequent upon this unknown element of attraction." He also says again, "The greatest discovery ever made by man, namely the law of gravitation was also attacked by Liebnitz, 'as subversive of natural, and inferentially of revealed religion.'"

If Darwin says the attraction of gravitation is an "unknown element," and Liebnitz says it is "occult qualities and miracles," am I not justified in naming this "unknown element," to call it what it really is and must be from known facts and analogies, electro-magnetism or a form of electricity.

"Gravitation, magnetism and electricity," says Minor, "has hitherto been but little more than names for mysterious dynamic potencies. They are invisible in nature and do their work in cold and darkness. They are not generated, but generating forces, not dependent or secondary but elementary force. We now know that electricity and magnetism evolve light and heat, but as to gravitation our teachers are all silent." This is true, but the fact is now apparent that so-called gravitation is one of the electric forces. And these forces I contend constitute all the light, heat, and force in the universe. For instance, the electric light and the light of a candle are essentially the same. The electric light came from the cold, dark forces of electric currents, the candle came from the fat of animals fed upon vegetation produced by the direct magnetic rays of the sun, and in the flame of illumination they are passing back to the same field of electric forces from whence they came. The electric light and the lightning of a storm-cloud are the same except one is fed from a constant current, and the

other a transference of electric energy at high tension from one cloud to another at a single impulse.

Each planetary body is not only a magnet, but an electro-magnet, with currents so complete that though their velocity is as the light, they become restful as the ocean, and as abiding as the ages.

The law of inter-communion between atoms, and between suns and planets, which is called gravitation, but simply means attraction is thus stated, "The force with which two material particles attract each other is directly proportioned to their masses, and inversely proportioned to the square of the distance between their centres." Minor says, "This is the law of descending weights, but not the law of lifting weights. The law by which matter falls toward the sun, but not the law of orbital energy by which planets are kept out of the sun; and these two forces must be balanced forces. This repellent energy in atoms and space is revealed in all chemical and mechanical unions as equal to attractions, so that matter is changed from solid to liquid, from liquid to gaseous, and from gaseous to electro-magnetic, solely by the use of material agencies. The weight that falls to earth by attraction may be lifted by repulsion. Matter by attraction comes to rest in a body, by repulsion it springs like an arrow from a bent bow to its home in space. The process of growth in living organisms is carried forward by the working energy of the two equal forces of attraction and repulsion. I affirm all growing bodies are growing magnets, and are fed solely from atomic elements gathered from sun-currents and earth-currents, moved to their place in body under the guidance of magnetic attraction and repulsion." This is what I term the electric life energy back of all atoms, protoplasms, life forms, earth growth and star-dust.

Professor Trowbridge says, "We are beginning to have an inkling of the relations of electricity and magnetism to

light and heat and to motion. Every day fresh evidences of the laws of transformations of energy increase our knowledge upon electricity, but we are absolutely ignorant of the relationship of gravitation to the subject of electricity and magnetism, light, heat, and motion."

Gravitation force is perhaps the greatest mystery in physical science and its manifestation is so Omnipresent, so silent and unsensational, that our minds rarely dwell upon its mysterious action. It seems this eminent scientist does not accept the attraction of gravitation as a solution of the phenomena it is intended to explain, and that it is yet but a name for an occult mystery.

He says again, "The ether is supposed to be the medium by means of which the waves of light, heat, and electricity are conveyed to us from the sun. If we could also show that the force of gravitation results from the different rates of flow of this medium through the particles, or around the atoms of bodies, we might bring gravitation into closer connection with electro-magnetism." He adds, "We have never detected any effect of the ether upon the motion of bodies, and experiments have been inconclusive."

The attempt to explain the force of gravitation by the impact of corpuscles was advanced by Le Sage, whose theory was that all bodies are bombarded by an immense number of corpuscles which are flying about with great velocity. One mass therefore partially shades or protects another neighboring mass, and thus on the sides that are not opposed are apparently attracted toward each other. But this theory has been discarded, the velocity and energy of the corpuscles required would be too enormous. The rate at which their energy must be expended in order to maintain the gravitating property of a single pound is shown by Maxwell to be at least a million of millions of pounds per second, which energy if communicated to a body in the form of heat, the amount of heat so generated would

raise the whole material universe in a few seconds to a white heat.

Maxwell states that all the theories which have been brought forward to explain gravitation—namely Le Sage corpuscle theory, the generation or absorption of fluid by bodies under pressure, the wave theory—require the expenditure of work, and do not accord with the great principle of the conservation of energy. Hence he concludes that the explanation of the cause of gravitation is not to be found in these three hypotheses.

Hudson says, "Astronomy previous to the promulgation of Kepler's laws and the formulation of the Newtonian hypothesis of gravitation was in a state of chaos. What the Newtonian hypothesis did for astronomy, the atomic theory has done for chemistry.

"Newton's theorem is undemonstrable except from its results. No one would hesitate to act in the most important concerns of life—nay, to state his very existence—upon calculations based upon Newton hypotheses. Yet there are not found wanting men who deny or doubt its abstract correctness. Volumes have been written to disprove it. It is equally impossible to demonstrate the abstract correctness of the atomic theory. No one ever saw, tasted, or smelled an atom. It is beyond the reach of the senses.

"The most that can be said of any scientific hypothesis is that whether true in the abstract or not, everything happens as though it were true."

In all my reading and research, I have found but one scientist who hints at my conclusions in regard to the connection between electricity and gravitation, and I discovered his views since preparing this book for publication. He is no less a personage than Faraday, but his faith was weak, and his experiments unsatisfactory. He says: "The long and constant persuasion that all forces of nature are mutually dependent, having one common origin, or rather

being different manifestations of one fundamental power, has made me often think upon the possibility of establishing by experiment a connection between gravity and electricity, and by so introducing the former into the group, the chain of which including magnetism, chemical force, and heat, to bind so many and such varied exhibitions of force together by common relations."

Bravely, wisely suggested, but after a few ineffectual experiments, he concludes as follows: "Here end my trials for the present. The results are negative. They do not shake my strong feelings of the existence of a relation between gravity and electricity, though they give no proof such a relation exists."

Well, truly a suggestion by Faraday, is better than "proof strong as holy writ" by many other scientists. He perceived the truth but because he could not demonstrate with the accuracy of mathematics, he gave up the thought, but not the hope. He should have remembered that the greatest accepted truths of science are but accepted theories incapable of absolute proof. I contend that the so-called attraction of gravitation is but a "different manifestation" of the "one fundamental power"—electricity. That there is a unity in the forces of nature, and all light, heat, force, magnetism, electricity have one common origin and constitute the elemental energies of the universe. And that so-called attraction of gravitation, is universal electric magnetic attraction.

CHAPTER V.

WHAT IS ELECTRICITY, AND WHAT ARE ITS USES IN NATURE ?

THE question is often asked, what is electricity ? Science has never been able to define it. With all its erudition, it declares "it is an invisible substance known only by its effects." Its properties are declared to be "of such an extremely unusual kind as to appear almost magical." It is the most powerful substance known in nature ; it permeates all matter, and all space and is interchangeable into light, heat and force. It is subtle and invisible like spirit, it is potential and mysterious like Deity, it is instantaneous like thought, it is incomprehensible like infinity. It seems a conscious entity like the soul, so wonderful are its offices, and its powers.

It must be akin to spirit, for it links spirit to matter, dust to Deity, life to inanimate substance. Man by its use is mastering nature as God masters it, and learning the lessons of a new creation by utilizing its wonderful properties for his comfort and happiness.

He has harnessed it to the motors of commerce, made it weld and forge obdurate metals, and separate them from the dross that surrounds them, convey living thoughts under the ocean and across continents, and shape and mould a thousand useful articles of trade and commerce.

He has made it listen, and catch words, and sounds, and hold them forever, and sing and talk like the human voice. It can weave garments, and sew shoes like an expert. It can handle laces and silks and jewelry like the deft fingers of a woman. It can light cities, and keep time, and warm houses, and cure the sick, digest food, and restore health.

It gives life to seed, growth to trees, bloom to flowers, fruit to vines, harvest to summer, seasons to the earth, and light and heat to the universe. It paints more perfectly than any artist. It moulds earth, and suns, fruit and spheres, grass, leaves and flowers more beautifully than the most skilful sculptor. It colors the glittering rainbow. It throws the golden glories of auroral splendor over the rising sun, and weaves the gorgeous grandeur of its setting rays. It kisses the northern midnight into the crimson blushes of the aurora borealis.

It whispers in the evening breeze, and caresses with the gentle zephyr every nodding flower. It gathers the floating clouds, and shakes them in refreshing showers upon the parching earth. It draws them from their ocean beds into the humid air, and lashes old ocean with its surging tides. It is the tempest's rush, the torrent's roar, the cyclone's sweep, that hurls a mountain from its base, or lifts an infant gently as its mother's arms. It is the lightning's flash, the thunder's voice, the earthquake's shock, and speaks the language of Omnipotence and life. And when man's body dies, it re-solves it back into its chemical elemental parts, and makes it float in air, and bloom in shrub and tree and flower, and live in other living bodies, through all the endless cycles of its changing, varying curriculum of existence; preserving the immortality of atoms.

This mighty electric force carries worlds, and lifts suns, and scatters planets through the void of space. It vibrates the etheric atoms, defines the law of selection and affinity, solidifies matter, holds all things together in their allotted place, and creates and proclaims the law of cohesion and attraction. Not the law of gravitation, but the attraction and power of electricity and magnetism, which draws the needle to the pole, and draws all atoms and worlds to their electric magnetic centre.

The revolving earth generates electricity by means of its

swift motion, and the friction of the ether, and the weight of the forty miles of atmosphere, with its pressure of fourteen pounds to the square inch. The electric currents of the earth balance the clouds, produce the movement of the winds, the zephyrs, and the storms; sifts the snow and the rain, causes the ebb and flow of the tides in connection with the attraction of the moon, and produces the ever-changing phenomena of nature. So that the universe is a vast, wondrous, complex, electro-magnetic machine, running by the laws impressed upon it, and by the original creative force exerted and perfectly balanced in all its parts. Its movements and phenomena through the cycles of the past, seem so regular and harmonious as to be almost automatic. So that the creator might go into "a far country," into another universe, and it would run on in perfect harmony with God's will and law. Such are the marvelous works of Omnipotent wisdom, the wonderful power and forces of electricity, and the varied and unvarying forms and functions of infinitesimal and aggregate atoms.

He who believes in a special providence, has a consoling faith; but he who "sows that he may reap" trusting to the God of the harvest, has the practical wisdom of the ancients, who proclaimed, "Jove helps those who help themselves."

The world, and all planets and stellar systems are vast dynamos of electric generation, and are controlled by electric magnetic forces. While the dynamic suns of the universe pour forth their exhaustless streams of electric currents, to feed with light, and heat, and force, the countless constellations of the blazing heavens. And even man, and all animals in their physical organisms are electric machines of wonderful construction.

The earth is a vast electric machine, and like the revolving cylinder of a dynamo, it whirls and threshes the resisting air, creating the friction produced by its positive and

negative poles into powerful currents of electricity, that cause it to revolve on its axis at the rate of a thousand miles an hour; and by the electro-magnetic attraction of the sun, to shoot through space a million miles a day. The sun and earth generates the electrical power that revolves it on its axis, and that whirls it around its orbit. Why do I say this? Because there is no other power in the physical universe that can work these miracles.

Man has invented an electric machine or dynamo, which is the epitome and counterpart of earth. With its swift revolving armature, its positive and negative poles, it creates the friction that draws the electrical element from the atmosphere, just as the planet on which man stands draws it by its quick revolving motion from etheric space. While man transmits it to connecting wires to bear the messages, or propel the wheels of commerce, earth stores it in its atmospheric cushion, and compresses it through all earthly substances.

We have seen from high authority that gravitation, heat, light, magnetism may be converted into each other. We take but a single step forward in scientific thought in affirming that they are all modifications of one sovereign force, having a duality of expression which we designate as attraction and repulsion.

Light, heat, electricity, magnetism and gravitation, when fully understood, will alike give us the backward and forward motion of attraction and repulsion, while each will reveal a constant right-angled cross section of forces which give circular paths to the planets, and spherical form to all worlds, and all molecular atoms and seed and germ forms in all worlds.

I say all worlds because these forces have but one method in our earth, and suns and stars tell the same story of electric light and force that is told between our planet and the sun.

As electro-magnetic attraction commonly called gravitation, binds the solar system in the strong cords of its Omnipotent currents of force, and fixes the machinery of the solar system of satellites and planets, we believe it rules without a rival over the universe of suns and worlds.

One step more we may take in the unity of creative forces, and assume that chemical affinity, and electro-magnetism or electricity are but different expressions of the same universal force. While electricity finds expression in its control of planetary bodies across intervening space, chemical affinity finds expression in the mysterious enfoldments of atomic forms of matter in organic unions. These forces are beyond the reach of both telescope and microscope, but at the same time reveal their Omnipotence to the touch of each atomic element in the myriad forms of nature's buildings.

These electric forces must antedate all created forms of matter and can alone reveal the beginning of creation's work. The foundations of all suns and worlds were committed to their keeping, and they are now revealing themselves as the Alpha and Omega, the beginning and the end of all material measures of human thought as applied to the infinities of creation. They are those Omnipotent forces that hold atoms and worlds within their embrace.

In a single drop of sea water, we have the problem of the ocean; in a single raindrop, there is the story of the rivers; in a ray of light, the story of the sun with his family of worlds; in the fall of an apple the story of all world motion, and in the unfolding of life from a single germ the story of creation repeated from generation to generation.

The language of the senses is a universal language that has its foundation in invisible forces. There is a unity between the light and the eye, that indicates their origin in the same lines of force that now give sight to the brain life. In

the ear, there is evidence that the electric vibratory currents of force producing sound had a companionship with the electric life germ in which the ear had its beginning. So all organs of sense possess unmistakable evidence of having proceeded out of those electric forces that are unseen and imponderable. The knowledge of these, is the story of the garden of Eden, incorporated into the life of every intellectual being. As is well said, "That which weaves the life out of the garden home weaves the garden home into the life that dresses the garden, and they thus through the sense-touches of constant fellowship, constitute the natural boundaries of human life, and all possible sources of human wisdom."

Heat, light, and force are joint evolutions from electrical conditions of organic matter. They produce organic growth of material structure, and are the working energy of creative forces, doing the interior work in bodies in unfolding life forms. This Tyndall in his "Heat as a mode of motion," denominates as "potential energy," and the light and heat of environing space, as "dynamic energy." And he says, "Throughout the universe the sum of these two energies are constant."

Electricity through heat, light, and force in the creation of bodily forms brings matter from its radiant, invisible, imponderable state to its rest in organic structures under electro-magnetic attraction, termed gravity. By a reverse order of work, heat, light and extinction of electric or life forces, indicate the return of matter to its native etheric, and imponderable condition back to its home in space. Thus are the two grand energies of the universe revealed, the electric potential and the electric dynamic.

Thus visible and invisible matter through electric energy are constantly changing from one condition to another, from the ponderable to the invisible and imponderable,

through an endless cycle of ever varying, but immortal existence.

Cold and darkness, heat and light give the limits of attraction and repulsion, and all matter has its change of states and lines of motion between these limits. The energy or dynamic of cold is attraction, the dynamic of heat is repulsion. The electric energy manifested by cold is a centralizing force, that of heat a carrying orbital force. Bodies of matter come to rest atom by atom, under centralizing electric currents of force, while they revolve in their orbits on repellent currents of force; but "the sum of these two energies are constant"; and attraction and repulsion woven into each other's arms hold revolving atoms and revolving spheres in one constant life-giving, sympathetic embrace.

Professor Minor well says, "Catechise the electric forces as we may, they are the sources of all creative power, and hold in charge the atoms of the substances that now appear in world forms. The chosen path of these forces are not straight lines, but circles, their chosen forms are not many-sided figures, but spheres. Their true measures are from centres of rest to orbital paths of motion. Their units are atoms, and the dual balanced lines of the sunbeam and the oppositely moving lines of the electric current. The machinery of the heavens is driven by power applied from the grand moving currents of invisible matter in space as the ponderous water wheel is driven by currents of the waterfall. In such an electro-sphere of forces we can detect the agency that gives circular waves around a stone cast into the water, around a disturbed centre in the atmosphere giving vibratory waves of sound and waves of illumination and heat around a burning body."

This electro-magnetic balance of forces in no case or place on sun or planet can become a crushing force hostile to creative organization, or destructive to the most delicate

living forms of being. It is the plastic force of creation that handles so tenderly, shapes so gently, and governs so imperceptibly, that the created feels not the touch of the creator.

The planets move in their orbits as freely and silently as light in its grand streams of radiance. The velocity of planets in their orbits is no more wonderful than transmission of thought along our lines of telegraph. In the field of electric forces distance between magnetic centres of matter is insignificant. Currents of energy pass between sun and earth over 92,000,000 of miles in eight minutes, bringing the two bodies into the closest sympathy.

All the water in the rivers come from the air, and all the water in the air comes from the sea; so that we are indebted to the electrical currents of the sun and air for all the riches that the rain and the rivers supply.

Thus the blessings of electricity are above us and around us every hour. It falls from the sky in every shower of rain, it springs up from the earth in every blade of grass, it breathes upon the air in every fragrant flower. It comes in the freshness of the morning air, the gorgeous clouds and the green earth. It waves in the golden harvest, murmurs in the solemn woods, sings in the joyous brook, whispers in rustling leaves, distils in the silent dew, roars in the great tempest, comes forth in gladness upon the wings of the morning, shines in the gorgeous hues of the rainbow, and like Omnipotence surrounds us with goodness and mercy all our days.

The mountains are only the frozen waves of a world of fire. They were heaved up of old by stormy volcanic convulsions which left their stiffened billows still on high. Those subterranean electric fires are still burning. Not all the waters of the great ocean can put them out. The earthquake heaves the bosom of a solid continent to remind us we are walking upon the crackling crust of a sea of fire

—we are sleeping upon the thin surface of a burning ocean.

The volcanoes shoot their smoke and flame into the bending heavens to warn us of the mighty electric furnaces beneath ready to wrap the earth in consuming fire.

The full moon is a torn and blasted world, suffocated by the sulphurous breath of its own self-torturing volcanoes; manless, treeless, lifeless—a stony chaos of death—a caverned and abysmal realm of complete and terrible desolation.

If it were not for the ocean and electric action lifting its waters into the air this earth would become like the moon—a wilderness of death, a chaos of cold mountains, blackened cinders, and barren sands, without a bird to sing in its solitudes, or a flower to relieve its desolation.

The electric attraction of the sun lifts the waters of the sea into the air; the electric currents of the air waft it all over the land; these currents form the clouds, and shake their refreshing burden upon the thirsty land; and thus vegetation is kept alive, and food is supplied to every living thing. The sea is the source of the rivers—not the rivers the source of the sea. The Bible was right when it said “the waters go up by the mountains,” although we say “all streams run into the sea.” Yet they must first go upon the electric currents of the air—on the invisible wings of the winds to the high places of the hills, or they could never return singing on their way to their home in the deep. Every drop of water in the ocean has taken that invisible journey a thousand times since the foundations of the seas were laid. And every drop of blood in every living body, and every atom of matter, has floated in that invisible ether, and mixed in that invisible ocean that hangs above our thoughtless and heaven-protected heads a thousand times since the revolving earth began. All the machinery of man pumping and groaning night and day

through all the year could not carry as much water to the fountains and spring heads among the hills as the electricity of the sun and air carry in the silent hour of a summer noon. We live and breathe every day beneath an invisible ocean which, if it should fall upon us, would destroy all the habitations of men in a moment.

Professor Trowbridge in estimating the lifting power required to raise the immense amount of water into the atmosphere, which constitutes the rainfall, says, we get 1,407 cubic miles, as the average annual rainfall in the United States, which he says is equal to all the water in Lake Michigan and 174 cubic miles beside. In accomplishing this nature must perform the work of lifting 3,166,000,000,000 tons one mile per year, nine billion tons one mile per day, and one hundred thousand tons per second. A ton lifted one mile per second is 19,200 horse-power. The work done by nature therefore in raising the rainfall to the clouds is equal to 100,000 times 19,200 horse-power, or 1,920,000,000 continuous horse-power, or the work of five billion horses working ten hours per day.

What perfect balancing of forces must be requisite to carry all the oceans of the earth through space a thousand times faster than the eagle flies, and at the same time turning over thirty times faster than the speed of a railroad train, and yet not let the water run over on the land. This is what electricity does.

The electric power which combines two elements in the composition of water, and which lies slumbering with all its energies in a drop, is the same which heaves the mountains above the clouds, and shakes a continent with the subterranean thunders of the earthquake.

It breaks through the barriers of the eternal hills; and by its slow and secret process, in the workshops of the sea and the volcanoes, it is still building and rebuilding the world. It has ground and sifted the sands of the desert and

the seashore; and shaped and hardened the marble and granite quarries of the hills; it has built up the fruitful soil of our fields; and left its record on the tops of mountains, and in the rock-ribbed foundations of the earth.

The mines of coal and iron, silver and gold, were once stored in the secret treasure-house of the seas by electric energy.

In the silent chambers of earth and sea and air, still dwells and toils the mighty electrical forces that lifted up the mountains and laid the solid floors of islands and continents.

Scientists have at last, as Minor says, really found that all ponderable combinations of matter are built up from, and controlled by the *unseen and imponderable*. All power of motion (and life) in matter consists of the universal energy of attraction and repulsion, which is in all primary atoms of which all bodies of matter are created, and are the immeasurable, eternal foundation elements of all world building. There are but two forces that control the changes of matter; one is the electric force of attraction or aggregation, the other the electric force of repulsion or diffusion. In free space these forces constitute the compound force of planetary motion, and in matter the dual force of cohesion and propulsion. Matter could never have been gathered under any other law than that of gravity or electrical attraction. And the law of atomic electric attraction laid the rocky foundations of the earth, prepared the ocean beds, lifted up the mountains and the continents covered with lakes and rivers, verdure and forests; and developed the infinite forms of animal life that are fed upon earth's teeming harvests.

They came from the great electric magnetic sea of balanced forces in which the suns and planets constituting all worlds are balanced upon accurately poised centres of equal attraction and repulsion. It is a sea as boundless as space,

and pervaded by wonderful currents of electric force, and imponderable virgin matter that compass the universe with their vibrating energy.

Professor Crookes says in reference to his experiments with the wonderful Crookes' rays, that they brought him "face to face with matter in a fourth state, or condition—a condition as far removed from the state of gas, as gas from the liquid. We had touched the border land where matter and force seem to merge into each other—the shadowy realm between the known and the unknown." He further adds that the greatest scientific problems of the future will find their solution in this border land and even beyond, where lay ultimate realities, subtle, far-reaching and wonderful. Have we not found these in the marvelous powers, energies and agencies of electricity?

We have no evidence of loss of light or heat in the sun; and the theory of scientists that it was fed by other worlds being drawn into its burning vortex is now exploded. The better and largely accepted theory now is that the light and heat of the sun is supplied by his attracting energy as a great magnet drawing virgin atoms of matter into his atmosphere, thus evolving light, heat and electricity within his own photosphere, where there is no waste of energy.

Every planet by this law of attraction and evolution shines with its own light measured by its own electric attracting energy, and warms itself from its solar centre and space that supplies its ever-growing strength. The power that appears upon the earth as sunlight is awakened into force within the earth's atmosphere, by the resistance of the atmosphere and the attraction of the earth.

The gaseous, the liquid, and the solid states of matter, all wait on the electro-magnetic elements of light and heat for their beginning and permanency of structure. It is said the dream of our ablest philosophers "that light and heat in the sun are generated by resistance to gravity," is in-

terpreted by Minor to teach that *resisted gravity is light and heat*, wherever it is revealed in sun, stars or planets. Light and heat, electricity thus evolved, are building forces lifting matter from space into body, and then surrendering it to cohesive affinities which is another form of electricity.

The same author says again, "The fact that chemical affinities are all under the control of electrical energy, and atoms enter into molecular unions from opposite electrical states teaches that the sources of supply are from electromagnetic currents."

Out of the dark cold void of space have been gathered the suns, and stellar systems that stud the heavens with their brilliant lights—ever burning, never consuming; with their electric fires undiminished through all the ages, earth gathers her electric fire and forces from the sun with its diameter of 865,000 miles of solid nucleus, as the revolving centre of the solar system, from which he sends out his radiating floods of energy to all the planets including Neptune, the outermost planet in his family of worlds. And so exhaustless is the electrical power that commands perpetual motion and wonderful velocities, that in the swing of a pendulum beating a second, the currents between earth and sun move 186,000 miles; and Mercury goes forward in his orbit 30.40 miles; Venus 22.24 miles; Earth 18.91 miles; Mars 15.32 miles; and Neptune at the distance of 2,272,325,000 miles from the sun moves three and one-half miles. This shows the wonder-working power of the polar and equatorial electric currents of the solar system.

They consist in the positive and negative or repellent currents flowing in opposite directions in space with equal strength and equal velocities.

They are in stellar space the same forces that Joseph Cook calls the "coördinating forces that work back of the bioplasm arranging the growth of the whole (animal) body." And of which he says, "Take out the bioplasts, you know

the power is there ; but you cannot see it, you cannot touch it. The coördinating forces which we know exist in the physical organism is the true body." This weaves the network of forces through every organic form, and "presides over every generative embrace of atoms or organic bodies of atoms."

As has been well said, "to an American the question, what is electricity? has a great national interest." Benjamin Franklin, Joseph Henry, Edison and Tesla have been like electric lights on the mountain tops of this continent, and in America the practical applications of electricity have been so swift and extensive, its manifold transformations are peculiarly congenial to the American temperament.

Electricity no longer stands apart, a mysterious force as Franklin regarded it, having no connection with light or heat. We cannot now study it apart from the manifestations of light, heat, magnetism, force.

As soon as we began to measure the forces of attraction and repulsion, and the energy it makes manifest in heat, light and force, electrical knowledge took a herculean stride, and men saw clearly the transformation of mechanical work into heat, and the relation between the work of a horse in producing this transformation and the food which he eats.

As soon as Faraday showed that motion could also be converted into electricity, and Joule showed the equivalence between the energy of movement and the electrical energy produced, the new electric era began.

The subject of electricity took its great forward movement not from the side of the subject investigated by Franklin, but from the side of magnetism. It was the movement of a magnetized needle that led Faraday to his great discovery of induction and the conversion of motion *into electricity*.

Professor Trowbridge says, "We know little more of the properties of the loadstone and of permanent magnets, and of the magnetism of the earth, than was known to Count Rumford or Sir Isaac Newton, who thought that if all loadstones, the earth's magnetism, and the permanent magnets were destroyed, that magnetism would disappear from the earth. A century ago there was no conception of the possibility of producing a magnetic condition in iron by means of a wire wrapped around the iron and connected with a voltaic cell; for the principle of electro-magnetism was not discovered until 1819." He says further, to-day if there should be a destruction of all loadstones, permanent magnets, and the earth's magnetic force, the world would only be incommoded by the substitution of observations on the sun and stars, for the observation of the ship's compass. We could produce permanent magnets and powerful electro-magnets by the use of voltaic cells.

The question what is electricity, is closely allied to the question, what is magnetism? what is light? what is heat? what is the perpetual motion and cosmic forces of nature? I hold they are all one and the same, with different manifestations, offices and powers. I maintain the unity of all forces in nature, that they are all from the one original elemental force. That all the mysterious, creative, sustaining protean forces of nature is electricity in some of its forms, and are different manifestations of one fundamental power.

That from electricity comes light and heat, and all material force, including attraction, cohesion and gravitation. Franklin said, "As to the magnetism which seems to be produced by electricity, my real opinion is these two powers of nature have no affinity with each other." But science has proved that Franklin was mistaken; and it now includes in electricity not only magnetism, but light, heat, force, and transformation of energy; and needs to take but

one step more to include gravitation, and make electricity cover all the forces of nature. This I contend it should do, and that all light, heat and force in nature are electricity.

The discovery made by Galvani and Volta of the galvanic battery and the voltaic pile, which were simple forms of electric machines, it was ascertained that an electric current was generated whenever two dissimilar metals connected by a wire are immersed in a liquid capable of conducting electricity. A voltaic pile in its first form consisted merely of discs of copper and zinc separated by pieces of blotting paper moistened with salt and water.

"If," says Professor Trowbridge, "the handles of a silver spoon and an iron spoon are connected by a copper wire, and the bowls of the spoons immersed in a tumbler of salt and water, an electric current passes from the silver to the iron along the copper wire, and in the water from the iron spoon to the silver spoon, and constitutes a battery sufficient to send a signal under the Atlantic from America to England."

But the supply of electricity now however is not obtained from batteries, but from dynamos, which supply it with the ease and abundance that gas and water may be supplied, and which give practical commercial uses to electricity. The discovery of currents of induction made by Faraday and Henry is the foundation of the action of the dynamo and of the telephone.

Why two different metals immersed in a conducting fluid produce a current of electricity is not well understood, and brings forward the great problem of the connection of electrical action and molecular motion, which includes the fundamental principles of chemical action. And both chemistry and electricity are becoming a study of motion; and the mystery of chemical and electrical action and motion constitute the difference in form and substance or appearance of all matter, producing the vapor, the fluid,

the solid,—the hardness of the rocks and metals, and the softness of wood and flesh.

If we run the wires from a battery into ascidulated water we find that the water is broken up into its constituent elements—the bubbles of hydrogen gas are given off at one end of the wire, and bubbles of oxygen at the other. This action is called electrolysis, and is intimately connected with molecular motion; the electrical action having rent asunder the hydrogen molecule, and the oxygen molecule—the bond that made the particles of water, and there is decomposition of the water, and the particles are then free to vibrate independent of each other, and form new combinations.

The galvanometer has shown that electrical actions pervade all matter, and that there are electric waves in the ether of space; it can detect slight molecular disturbances, and also reveal mysterious effects in the ether of space. It is the electrical microscope which has revealed the great world of electrical activity in which we move. The earth is a great magnet and the currents of electricity make it an electro-magnet with two poles; one attracts, the other repels, and thus causes the earth to revolve round its axis.

It is well said that the ancients could not have possessed dynamo machines or telephones for they knew not the art of making wire, nor the art of covering wire with cotton or silk. There is no trace of such wire in the ruins of Egypt, Greece or Rome, and it is the discovery and art of the present century.

The modern dynamo is a machine that excites currents of electricity in a coil of wire passing rapidly near the poles of a magnet. The current is excited in the coil in one direction by movement near a south pole, and in the opposite direction by movement near a north pole, and a commutator directs these opposite currents through another coil in the same direction. The dynamo is a simple

machine consisting of a number of coils on a revolving shaft surrounded by fixed pieces of iron, around which the currents formed in the revolving coils are made to circulate. It is driven by a steam engine, and has reached its highest development.

Professor Trowbridge says: "We have learned that light, heat, electricity, are embraced under one head—that of the transformations of energy. Electricity no longer stands apart, a mysterious force, as Franklin regarded it having no connection with light or heat. Before his day the knowledge of electrical phenomena was confined to the observation of the attraction of magnets, and of frictional electricity. As soon as men abandoned theories of subtle fluids, and began to measure the forces of attraction and repulsion, and the equivalence between motion and the energy it makes manifest, the science of electricity took an immense stride."

Faraday's discovery of the galvanometer and the law of magneto-induction, and Maxwell's electro-magnetic theory of light, which gave the conception of electrical actions in the medium of space, laid the foundation for the electrical science of modern times, and established the fact that the earth is a magnet, and any motion of a wire on its surface will cause a current of electricity in the wire, and enables one to signal under the sea through a cable by properly waving a coil of wire in the air.

Faraday never realized the powerful effect that could be obtained when his lines of magnetic force were made to quiver with great speed. The telephone is an instrument based entirely upon his discovery of magneto-induction. The telephone into which we speak, corresponds to the electric dynamo, and the one to which we listen to the electric motor.

But there is no commutator; to and fro currents are

used—that is an alternating current dynamo, and an alternating current motor.

The electro-*tonic* state in the media surrounding wires carrying currents and magnets is made definite by the quivering of the magnetic lines of force. These lines stretch out from the poles of a magnet and seek the shortest passage from one pole to another. They pass from the North pole of the earth to the South pole through the atmosphere. The slightest movement of a wire anywhere on the earth's surface, produces an electro-motive force in the wire if it cuts the magnetic lines of force of the earth.

The oxygen of the air itself is magnetic, and more lines of force will pass through it than pass through copper.

Faraday believed that all bodies are more or less magnetic, and this is the modern conception. The lines of magnetic force pass through all substances. They pass through wood, brick walls, copper, and all metals, and no substance cuts them off.

The electric energy of the dynamo is not transmitted along the wire; it is manifested in the ether of space, and in the insulating media about the wire; so says Professor Lodge. Electricity therefore does not travel to a distant motor through the wires but through the air. The electricity of an Atlantic cable battery does not travel through the wire strands, but through the insulating sheath, which seems singular and paradoxical. He also says oscillations of electric waves or currents go far into the billions per second. Oscillations as rapid as ten millions a second can magnetize iron.

When people imagine they can tell which way a lightning discharge passes, whether from the clouds to the earth, or from the earth to the sky, they must reflect on this oscillatory phenomenon, and consider the interval between such oscillations is less than one ten millionth of a second, and that an impression remains on the retina of the eye only

about one-sixteenth of a second. The human eye cannot therefore distinguish direction in the electric spark.

Light, heat and electricity are manifestations of electro-magnetic waves which come to us from the sun. The waves of electricity travel with the velocity of light. The sun is a vast electric globe; and the sun's light is due to carbon burning in an atmosphere of oxygen.

We can send electro-magnetic waves through brick walls and detect them in neighboring rooms. We can photograph by means of waves that have passed through a brick wall, and those which have passed through opaque metallic screens, which cut off entirely the light rays so considered. We can send them through blocks of wood and iron, and through the human body, and photograph the skeleton as though it stood unclothed in flesh.

We cannot detect the heat waves so far as we can detect the electric waves. The heat waves are nearer in length to the electric waves which we can detect, than the light waves. We can measure electro-magnetic waves generated by a spark, and we can measure heat waves which accompany them.

Professor Trowbridge says, the phenomena of electro-magnetism compel us to assume the existence of a medium through which and by means of which the electrical energy is transmitted. And I hold that medium or substance is the invisible etheric atoms of space. These atoms contain all the elements of nature in invisible solution.

As to those counteracting and complementary forces which we name carbon, oxygen, hydrogen, nitrogen, gas and all the entities of creation, which with all their mysterious combinations constitute the varied visible things of the world; we know about as much as Franklin knew a century and a half ago. The discussion of the wave theory in a medium, and a molecular theory of movement of matter, and the hypothesis that the ponderable atoms vibrate,

but with much smaller amplitude than the ether particles is of little consequence. We know there is a vibration or movement of atoms which is caused by electrical energy or force and that covers the whole question.

There is among our best scientists a lack of clear distinction between electricity and magnetism, which I deem the simple phases of the same force. Ampere regarded magnets and currents as identical, and taught that "magnets are bodies traversed continually by electric currents." Baile, a French scientist, says, "Here are two series of facts, magnetic phenomena, and electric phenomena, separated to this day yet coming together and confounding themselves with one another." He seems to adopt the thought of Ampere that "one and the same cause may produce effects differing from one another." They are as I conceive but different effects of the same force. They are the coming and going force currents of nature in worlds and organisms. They move through our own bodies, going and coming from brain and heart, from magnetic centre and outer space, perpetuating our being. They are the hum of the machinery that is working in all the various worlds, and inhabitants of all worlds. They are the living wheels of a vast system of machinery moved by the force currents of creative power. The suns and planets are the great reservoirs of working forces.

Professor Trowbridge closes his recent book on "What is electricity?" as follows: "What shall we therefore answer to the question, what is electricity? Must we reply, we are ignorant, and we shall remain ignorant. We have already strong grounds for believing that we live in a medium which conveys to and fro, or periodic movements to us from the sun, and that these movements are electromagnetic, and that all the transformations of light and heat, and indeed the phenomena of life, are due to the electrical energy which comes to us across the vacuum which

exists between us and the sun—a vacuum which is pervaded by the ether, and which is a fit medium for the transmission of the electro-magnetic waves.”

Says Professor S. E. Minor, “Heat, electricity, and magnetism are in their ordinary phenomena, very unlike each other, yet modern investigation has shown they are mutually convertible. Heat can be converted into electricity and electricity into magnetism. Magnetism can be converted into electricity, and electricity into heat. This indicates that these are not radically distinct, that their phenomena have a common origin, that in each we have the same force, manifested under different forms.” This is well expressed, for there is no force or attraction in nature but electricity. He says again, “By learning more about matter and its method of world-building we shall advance in the right line of progress toward an acquaintance with the Creator. The popular argument of first cause as a beginning in the work of creation we regard as fallacy. *A duality of causative forces* must logically be the sources of all being, as when result follows cause there must be an entity outside of itself.” There is no language yet discovered capable of revealing the true story of the creation of the heavens and the earth. The alphabet of creation’s history must be sought in the unseen forces that fashion matter, giving it place and motion, while they hide themselves in elementary forms that move with the velocity of light, giving seed time and harvest to all worlds, and clothing them with the changing drapery of an eternal, creating potency. Our conception of these dual causative forces are the Eternal Creative Spirit, and the invisible forces of electricity operating upon etheric matter scattered through all space.

CHAPTER VI.

ALL LIGHT, HEAT AND FORCE IN NATURE IS ELECTRICITY IN SOME OF ITS FORMS.

ALL light, heat, and force, in nature is electricity in some of its forms. This seems a radical statement, but the analysis of scientific facts justify it. It does not trench upon the power and domain of spirit, which is back of it controlling and propelling it; nor of atoms and matter which is controlled and propelled by it.

The sun is the great central electric magnet which controls the life and motions of the solar system. This is the present accepted scientific belief; though it was questioned for several decades in the past half century, because the theory prevailed that if the sun was a magnet, its blazing streams of electric heat and light, were fed and kept up by fragments of worlds, and meteors falling into its burning bosom. Many scientists for a time refused to accept the theory that the sun was a great magnet, because of the theory that then went with it, that it was fed by burning worlds. They claimed that if true it would comparatively soon burn out, and exhaust itself, and moreover be irregular in the force exerted; whereas there has been little or no apparent diminution or irregularity of power. So that while the manner of keeping up its magnetic supply is questioned, the fact that it is a great magnet is now generally acknowledged.

This being so, its rays or beams produce what? First light, second heat, third force or power. They light the earth, they heat the earth, and store it with force or power.

Power to grow grass, and trees, shrubs, and flowers, and to produce all vegetable and animal life—to produce motion, accretion and vital energy. If the life-giving rays of the sun in their wonderful alchemy contain light, heat, magnetism, and vital energy, which cannot be questioned, and they are the product of electricity, then electricity contains all these, and they are but different properties of the same substance. Therefore light, heat, and force, are electricity, and they are one and interchangeable. Since the dynamic suns are the source of all light, heat, and force, in the universe, all light, heat, and force in nature must be electricity in some of its forms. If its source is electricity, its elements are electricity. If the blazing sun is an electrical body, and the source of life-giving light, heat and force to atoms and worlds, then electricity is the power in nature for the evolution and preservation of the physical universe. The rays of light contain heat, the atoms of heat contain light, and both contain subtle force and energy.

This is wonderfully exemplified in the recent discovery of the wonderful Roetengen or "X-rays," which have such force and power as to penetrate man's body and illumine it, so that the bones and skeleton are plainly visible, and even the hardest substances are made transparent as glass. Who knows but what the sun looks through the earth, like we look through a crystal? If it can look or penetrate through man, animals, and all vegetables on its surface, why may it not penetrate the ocean, and the rock-ribbed earth?

As we know electricity is everywhere, and in everything, and the sun's rays are electricity, what may be the effects of its penetration upon the internal fires and volcanic action of the earth? These rays also contain all the colors of the rainbow, and photograph all nature like a mirror. Who knows but that the Almighty may look into a sun-

beam or a dewdrop and see the universe magnified and perceptible in all its details.

Doctor March says : " Light is the crown and glory of the visible world. It is the source of life and energy to the body, and the symbol of truth to the soul. So far as we know it is the most beautiful and glorious of all the material works of God. The firstborn of creation, it is the ethereal body of the Omnipotent word at which it flashed into being. It is the chosen medium through which the Divine energy continues to bestow, and sustain life. Everything that lives and grows in the whole kingdom of nature derives strength and stimulus from light."

All our ideas of form and color and material beauty come to us through the agency of light. The pupil of the eye is the portal through which light brings all the riches and glories of the earth and heavens to adorn the inner chamber of the soul. The mind has only to lift the curtain of the eye, and millions of bright heralds will rush in to describe the form and hue and order of everything in the world of vision. I take in at one glance the whole range of the Alps, I gaze on the evening clouds swimming in a sea of fire around the setting sun. I see the stars hang out their golden lamps in the dome of heaven. The light has sent swift heralds from near and far to tell me the form and hue and distance of everything within the range of vision. Some of these messengers have brought their tidings in an instant, and some have been on their way a million years to tell me where of old the breath of God blew a million of suns into flame and sent them forth to sing and shine among the rival spheres of heaven. And to me it is as if this vast and varied scene were the creation of light. Take from me the faculty of vision and in place of this wondrous world of beauty, a blank and pitiless wall shuts me in on every side.

The mightiest and most marvelous changes in the visible

world are due to the swift and silent agency of light. Light is the symbol of life of beauty and gladness.

By it the gloom and horror of night vanish. The world which was silent and formless like chaos in the darkness, rises to view with clear and orderly proportions. The hills resume their wonted range, the rivers stretch their silvery band, the smoke of farmhouses rise, the song of birds welcome the day. All is life and action where before was silence and darkness. If we had seen but one such change from night to morning, we would think it a new creation,—a newborn realm of beauty snatched from "Chaos and Old Night," with fresh "glory shrouded in its garb of fire."

The question which the most profound philosophers have never been able to answer, is where is the fountain from which light springs? And how does it fly upon its swift journeys?

All light, heat, and force, in nature is electricity in some of its forms. From what other source come these, but electricity? What other force or power in nature is there, except electricity? There is none, science virtually admits it.

Back of it is a greater power, the spirit of God, and the spirit of man, which propels and controls it; before it is all matter which is its servant and plaything. But in all physical atoms, forms and entities, there is no light, heat and force, but electricity.

Even the coal mines, the black diamonds of the earth, are but the imprisoned rays of the sun,—but stored electricity in the bosom of nature for the use of man. The same is true of the glittering diamond, which is but a miniature sun,—a baby tear from the dynamo of the universe, a crystallized spark of electricity. The same is true of the ruby, it is congealed fire, a frozen sunbeam, a dew-drop of sunset.

Ah! but the physicists say, these are but stored carbon, or oxygen. And I answer, "Carbon and oxygen are heat, and heat is electricity, and the difference is only in name. A distinction without a difference." They say again light and heat and force and electricity are different. I answer they are only different as vapor, steam, water, ice are different. Both and all are different manifestations of the same entity.

The question may be asked "What causes the earthquake,—those vast upheavals of the earth's crust or surface?" I answer; "the heat of the internal fires causes what may be termed an etheric-electro-chemical expansion, which displaces a part of the earth's surface. The volcano is produced by the same cause, and are but the chimneys of mother earth for the outlet of the compressed heat, gases, and molten matter beneath her heaving bosom." If at the Divine fiat "there was light," light brought heat, and both brought force and life to physical existence, then all physical power is from these sources, and there is no other light, heat or force in the material universe but electricity in its numerous phases and functions.

Electricity is stored in earth, air and water. In the earth it causes the growth of all vegetable and mineral substance. In the air and water, it mixes the elements of nature in just proportion to all the needs of inorganic and animal life. It shapes the forms, strengthens the tissue and muscles, gives action and force to all animal organism, and responds to thought and instinct. By it man wields his arm, lifts his foot, and controls his body. It converts water into vapor and vapor into steam, and propels the mighty locomotive, and the swift ocean steamer.

Even now, the renowned Tesla, and the marvelous Edison, are preparing to utilize it for the world's commerce and manufactures, one by the direct use of the sun's rays, and the other by the pressure and movement of the ocean's

waves. Its use will eventually transform the world, and help to bring peace and the millennium. By the discovery of its combinations and forces, men will produce such fearful explosives and engines of war, that war will mean annihilation, and the destruction of nations. Even now, the electrical appliances, and the electro-chemical combinations of dynamite, are so powerful and destructive, as to make men stand aghast at the very thought. So powerful is it, that the treacherous use of a few hundred pounds of this electro-chemical combination, blew into fragments the mighty war ship, the *Maine*, which with its massive iron frame work, and tons of armor, sat like an island in Havana bay. And with it blew into eternity two hundred and fifty-eight unsuspecting American sailors, whose horrible, treacherous death shocked the world, and caused a long-suffering, patient nation to spring to arms to avenge the dastardly inhuman crime.

A brief reference to the history of science shows that Copernicus less than four hundred years ago discovered the spherical form of the earth, its revolution upon its axis in about twenty-four hours, and its revolution around the sun in three hundred and sixty-five days. It then seemed too incredible for belief and more difficult of acceptance than all the miraculous teachings of the preceding mythological ages. It was a case where "truth is stranger than fiction." They could much easier believe that the earth was flat, that the sun rose and set and swung round once in twenty-four hours, for this was the testimony of their senses; or that Jove and the immortal deities dwelt in the heavens just above the clouds, and met on Mount Olympus to counsel and direct the destiny of ambitious and contending mortals; that Pluto reigned in the Inferno or dark caverns of the earth, and across the river Styx, presided over Hades, the land of departed spirits.

This discovery presented to its inhabitants "a new

heaven and a new earth," of which, in all their marvelous dreaming, they had never dreamed.

Copernicus, Kepler and Newton were the true prophets of the past, the seers of the ages, the benefactors of all coming generations. They lived as the rejected dreamers of their age, and many of their disciples have in turn become scoffers at the discoverers of new truths. Thus the advanced thinkers find each age prepared to reject new discoveries that conflict with the old masters. Yet all new discoveries tend to simplify scientific teaching, and unify the forces and facts of nature. The Copernican system impressed Kepler with the thought that the motions of the heavenly bodies were governed by some universal law that could be reduced to exact mathematical formula, which he did; and the same conviction led Newton to discover the law of universal gravitation. Franklin and Faraday, Harvey and Mesmer, Morse and Edison, by their discoveries, have taught us that as the potter and the clay must come together to form the rudest vessels, so creative electric force must touch every sensitive atom in organic being, and keep the wellsprings of life constantly flowing through all life forms.

There is no unfolding of buds and blossom, tree and shrub, without the coming and going of electric life-giving sunlight and earth light. They pervade all bodies of matter, whether world spheres or seed germs, and hold communion with all atomic centres of sensation and vital organisms.

Atoms seek their affinities, life forces and life forms touch each other by the grasp of magnetic attraction and repulsion, and these give personal sensations and vital forms of being. Through the medium of electricity, material and mental forces meet together upon the plane of human consciousness. This is nature's method of communication between the material and mental within the human brain, which has been a puzzling and difficult problem of physical

science. Tyndall says "we must visualize the invisible when we transport ourselves beyond the world of senses." Minor says "matter in its elementary state is as invisible and intangible as the forces that create and control it." The chemist tells us "all atoms of matter are regarded as originally charged with either positive or negative electricity." A molecule of water is made up of a positive atom of hydrogen and a negative atom of oxygen.

All world building must be from atoms to combinations, from space to body. Draper says "the rays of the sun are authors of all organization." Then the electric energy of the sun is the great world-builder and life-giver.

These two grand energies of space carry the great spheres so evenly poised upon the electro-magnetic floods of attraction and repulsion that all planetary motion is without resistance. They are the balancing units of universal energy, and preserve all power in universal harmony.

Their home is in the silent cold and darkness of universal space. From these electric forces the cold steel and flint bring light, and the rubbed sticks of the savage produce fire, the scientist, by friction upon the revolving disc of his electric machine, gathers powerful electric currents for heat or illumination or force. Then electricity contains in its substance and forces latent heat, latent light, latent sound chords, latent sources of sun energy, earth energy and life energy, and is, in fact, the only light, heat, force and energy in the physical universe. God built the world, but he built it under charge of the marvelous forces of electricity, which was the invisible hand of the Omnipotent potter in mixing the forms and forces of ever-changing matter.

As man is a magnetic electric body, like the sun-magnet and earth-magnet, the vibratory magnetic currents carry light to the eye, sound to the ear, heat to the body, taste to the tongue, flavor to the nostrils, and will and motive power from the mind to the body.

These same forces of electricity and magnetism uphold and move worlds as though held in the sensitive grasp of Omnipotence, and cause the planetary velocities that rival the flying radiance of the sunbeam, and produce sensations as delicate between sun and planets as between lovers at their bridal altar. With these sovereign forces there is nothing great nor nothing small; there is infinite unity and infinitesimal diversity. There are distinct personalities and expanding impersonalities, from the mustard seed of the garden to the sun with his retinue of worlds.

It is said wood and coal are simply frozen blocks of sunlight and gravity, and freezing is the rest point of attraction, as light and heat are the vanishing points of repulsion and motion. A high plane of power is reached when coal and wood are converted into the heated, rushing steam; then comes the vanishing line between ponderable and imponderable matter. But these are again converted into electricity, which is the highest dynamic state of invisible elementary substance or matter.

Our civilization has seized upon the imponderable forces of electricity and converted them directly into mechanical potencies, revolving the wheels of commerce and heating and lighting our cities. It is evident, therefore, that these imponderable forces that have troubled science to classify, are supreme over matter, holding the possibilities of material forms, and the sources of all life.

The great circles of forces that give us day and night, heat and cold, are inwrought into all the circles of life, and there is close communion between the imponderable electric forces and the multiform evolutions of matter into living organisms; and in attraction and repulsion, the choosing and refusing of these forces is an invisible organism that is more than the shadow of life in the animal and vegetable world.

The magnet is composed of ponderable matter and im-

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ponderable forces. It has a real body and also a phantom body of delicate structure as real and mysterious as light, heat and life. It has a dual organism that unites the visible to the invisible world, the organic to the inorganic, the created to the uncreated and elemental. It has a centre of rest and chosen paths of motion.

It has individuality, yet is part of a grand impersonality. It marks lines of latitude and longitude upon the earth, and holds communion with the sun in its daily circle, and quivers under auroral displays of electric power. The earth and magnetic needle have each an invisible electric or phantom body, manifested by currents of force that give them rest and motion.

The sun also has his electro-magnetic or phantom body of forces and across ninety-two million miles separating earth from sun, he holds communion with earth and needle, with land and sea, and the multiform organisms of earthly matter. The forces of the magnet and the sunbeams are a unit in conferring light, heat, and motion upon earth and sun.

These forces have bridged the great chasm separating sun and planets with a structure of forces as real and enduring as the steel of the magnet.

Did the sun and planets antedate these forces, or these forces antedate the world's? This is answered by asking, did the Creator antedate creation? These forces propelled the grand velocities of the planets, and created them, and all they contain, under the divine impulse or word of the creative spirit, when according to Moses, God said "Let there be light, and there was light."

What then is the cause of planetary growth, and planetary motion? I answer, electricity or electro-magnetism, light, heat, force, magnetism, all included under the one word electricity. It creates the marvelous velocity without which the planets would stop, and fall into darkness and chaos.

No visible or physical forces could work such wonders, and the materialist who worships at the shrine of the material, worships the stolid clay of the potter, when he should bow his head in the dust before the Creator of the invisible cosmic forces that are the master-builders of the universe, and the right hand of infinite power.

Professor Trowbridge, the eminent scientist of Harvard University, in his recent work on electricity, says "According to modern ideas, the continuance of all life on the earth is due to the electrical energy which we receive from the sun.

"According to the electro-magnetic theory of light all phenomena of light, and heat, as well as those of electricity, are manifestations of electrical energy. The subject of physics can be said to be the study of the transformations of energy. Indeed the characteristics of physical science to-day is its reliance upon patient observation and the study of the transformation of electricity into light and heat, or the transformation of heat into electricity.

"Maxwell's theory that light and heat are phenomena of electro-magnetic waves which come to us from the sun is now the greatest generalization in physical science, and in stating it Maxwell lighted a torch which has illumined many hitherto dark regions. The entire world is now working upon this great hypothesis. According to the electro-magnetic theory of light, the only difference between light, heat and electricity consists in the length of waves in the ether of space. The sun is the source of electro-magnetic waves, and the earth is the scene of transformation of electric energy. A piece of coal burning in a grate has therefore a long electro-magnetic history. It owed its origin to electro-magnetic waves, and in burning it gives out again electro-magnetic waves, of which we can only detect the light and heat manifestations."

The doctrine of the conservation of energy is little more than a hundred years old; yet this great physical doctrine

has accomplished great results in the commercial world. In the medical world the doctrine is daily being recognized; for the application of external heat to the human body to diminish the effort of the human organism to supply heat, or to supplement this effort in very young children, or very old people is now clearly understood. The death of very old persons at night is often due to the want of heat. Very young children also often perish because they are not supplied with sufficient heat.

This external heat which is a form of electricity facilitates the various transformations of energy which are going on in the human organism, so that too great a demand for it is not made on the internal mechanism.

The transformations of energy in the human body are more difficult than those of an ordinary steam engine, for they are more numerous and subtle. However there is a close relation between the amount of food consumed, and the work a man can do.

The steam engine is still the most powerful instrument for studying the transformation of energy, and steam is still the most economical agent for producing electricity. In the best engines a pound of coal will produce a horse-power, which is cheaper than water-power, because regulation and control of the water supply is more difficult. Steam is produced by the combustion of a past vegetation. The original action of electro-magnetic waves is shown in the growth of vegetation, which is buried in the earth for ages, which being exhumed, by combustion again becomes evident in a grand series of transformations.

The burning of a fossilized tree produces steam, steam produces motion which is converted into electricity, and electricity into heat and light.

The only difference between heat and light consists in wave length; the heat waves are much longer than the light waves.

The coal which generates the steam which drives the engine was produced by electro-magnetic waves from the sun. These waves in the dim past, in the form of light and heat, nourished the great fern and palm trees and luxuriant vegetation, which being buried in earth became our vast coal mines. Now by the combustion of this coal, which produces again through the dynamo these light and heat waves, originally from the sun, the electric energy is again transformed into motion; and the electricity from the sun that lighted and warmed the earth ages ago, again gives it light and heat and motion.

Hardly a tenth of the electro-magnetic energy stored in coal is given out. It produced the coal, and could make itself manifest, if we knew how to obtain electrical power direct from it. The steam engine is the chief source of electricity to-day, yet electricity is back of the steam engine and is in the coal and heat that runs it.

The spectacle of the transformation of energy by the dynamo in our great cities is most impressive. At the central station are immense steam engines which are whirling the movable coils of the dynamos on axles which run at about one thousand evolutions a minute. The dynamos weigh tons, whereas the early dynamos could be lifted by one man.

The electricity they send out along the wire, returns to them by the iron rails of the car lines, or through the earth.

Let us consider man as an electric engine. The food he consumes answers to the fuel we put under the boiler of the engine, and the source of this is also vegetation the same as coal, and the ultimate source of all vegetation is the electro-magnetic radiation of the sun. Animals and man breathe in oxygen, and give out carbonic acid. Joule points out that man resembles an electro-magnetic engine, and shows that man as an engine is far more efficient than any

known engine in which there is a consumption of fuel. In man food, together with oxidizing processes produce motion and animal heat. Many attempts have been made to measure the efficiency of the man-engine, by weighing the food consumed, and measuring the work done. The transformations of the food by electro-chemical process however are so varied and subtle, it is difficult to estimate them. In general the amount of work a man does bears a certain proportion to the fuel he puts into his boiler.

In modern medicine the conservation of energy is recognized, and heat is supplied to invalids in order to relieve the human engine from supplying it. The excess of heat in cases of fever is checked by the application of cold water; and various indicators used to ascertain the horsepower of engines are employed by physiologists to study the action of the heart as a pumping machine.

Plants also constitute forms of electric engines to use the products rejected by men and animals.

By the radiant energy of the sun they are able to decompose carbonic acid. They form a storage cell in which a current of electricity decomposes the liquid into oxygen and hydrogen, and form materials which again give electricity, motion, and heat.

The sun enables the plant engine to work. The electro-chemical or shortest waves of light are most effective in the plant engine in decomposition of carbonic acid, and in photography give the cold tar dyes and developers which are used to produce pictures of the very plants which have produced them.

Professor Ray Lankaster says, "The simplest living things are the cells of plants and they are joined by threads of protoplasm. In the cells of plants it used to be supposed that each mass of protoplasm was shut off in solitary confinement from its neighbors, but now it is found that in vegetable tissue also there are exceedingly fine threads

passing through from one cell to another, thus insuring the continuity of the protoplasm in them all.

"The conditions necessary for the vital activity of protoplasm are that it must have food, must have access to oxygen and must be acted on by some external stimulus. The stimulus may be of various kinds, and may be afforded by light, heat, electricity and chemical conditions."

Thus light, heat, electricity are the creating, developing energies of the simplest original elementary life-forms of all matter, and the same electric energies develop the highest forms of all living organisms. These cells of protoplasm are infinitesimal magnets, all vegetables are but larger magnets, all animals still larger, till we get to worlds and suns, the greatest of them all.

All the radiant garments of creation, in their varied colors of light and beauty that now appear to human vision, are woven from the same garments of immortality that wrap themselves around the initial centres of magnetic attraction and electrical forces, which are the centres of world creations.

And as the worlds were created by invisible electric forces under the guidance of the Omnipotent Creative Spirit, so these same electric forces are still carrying forward the work of their unfinished structures, and perfecting the unity and completing the harmony of creation. What we now call growth is electric attraction and accretion that was commenced at the beginning of nature's work of creation, and which continues to be the occult forces that secure the growth of a blade of grass, the unfolding of the tiniest seed with its inwrapped life germ and the development of a world, and which brings us face to face with the creative force that was the starting point of the "beginning," and will be the culminating centre of all ultimate perfected creation. It touches each growing seed, as at the beginning it touched each growing world centre, and

reveals the power and wisdom of creation in every evolving form of life.

The same electric radiate lines that give the parental image in the mirror by an instantaneous flash of light, give also the parental image in the germ life that evolves a new paternity. While we cannot trace the lines of electrical union that are mingled in this new life, we are justified in affirming that electric and radiant matter must have bridged the chasm between the old lives and the new, between parental duality and the dual forces of electricity, that produced a new germinal individuality. And the new life cannot be possible without the separate unfolding of two distinct organisms meeting in generative embrace imparting a new seed-life.

All germ life has its beginning in matter where positive and negative magnetic currents blend into unity. In the vegetable kingdom the circle of life from germ to fruitage is from magnetic centre to magnetic centre, the one an evolving centre, the other an involving, the magnetic or radial lines of matter converging from without in the unfolding life, and from within the plant to the germ in the unfolding life.

Our ideas of physical creation begin with the atoms of the sixty-four chemical substances in nature constituting matter, each atom having an identity fixed and immortal, and from which the world and all therein have been fashioned. Electricity working upon these invisible etheric elements, and substances gathered from the infinitudes of space, brought forth and maintains all the visible forms of creation.

The germinal life, and the food supply of the plant, fix the boundaries of its being. There can be no evolution of plant life into animal life. It is not scientific to search for such an irrational order of development. Vegetable, plant and tree in their organic life structure never become ani-

mals. They have no independent existence separate from the sun and earth, except as latent in seed-germ. Cut off the electric sun currents from their leaves, and the electric earth currents from their roots, and they are at once weakened and destroyed. From these electric currents the work of plant assimilation goes forward, building the plant structures from the germinal seed centre cell by cell both upward toward the sun and downward toward the centre of the earth, properly balancing the upward and downward growth to the unfolding organism.

Thus by the blending of the positive and negative circles of the magnetic circuit where broken circuits reunite, are produced the mysterious circles of life. As all material organism take on their organic form around electric or magnetic centres, drawing their atoms from electrical currents, so all life germs take their growth from the magnetic centres of their growing forms. Here in the field of electric forces is to be found the generative forces of organic matter—the mysterious births of all parental life. And the constantly revolving circle of periodic changes of growth and decay—of life and death,—of seed beginning and seed producing, like sunshine and shadow, light and darkness, are opposite points in the circle of physical life. The growing and dying life forms intervene between these two points of rest and renewal, of attraction and repulsion, of positive organism, and negative diffusion of matter.

They are the results, of the great electric system of attracting, and repelling currents of magnetism that are as fixed in their lines of force and order of work, as the rocks at the foundations of the mountains. In fact all that is strong and abiding in matter rests upon these currents of energy, and all of life is dependent upon the constancy and perpetually pulsating flow of these unseen electrical polemics of creation. Life is a universal unity, as light, heat, electricity and polarization which evolve it are unities.

The order of ascending life organism is from the simple to the complex, from the lowest plane of rock formation the series is upward, from the lowest form of vegetable life it is up to the highest and in the animal life upward till the crowning work is reached in the thinking animal we call man. To each ascending form there is an endowment of self-perpetuation, by parentage, and seed fruitage which involve the electro-magnetic condition of germ life.

Thus, by electrical forces plants build within each other and form others by elementary atoms, with power of self-propagation bridging the life gulf between silent atom and living organism, as if they were the material work of some spiritual builder.

Thus, by electrical forces nature builds all human and animal life forms and organisms. The primary atoms of matter have their home in the electric-magnetic forces, and are evolved from them into the material organisms of creation. When the electro-magnetic origin of light, heat, and force is fully accepted and its dynamic energy traced to its potential body we have reached the strength of primary electrical forces, and the unending circles of electrical potencies.

This brings us to the border land of creative work, to the mysterious sea of all life-giving forces, and the universal basis of all existing creations. Here spirit, matter, and electricity, the three great basic entities of creation work together in full accord in evolving and fashioning all material growth and material structures.

In material growth protoplasm gives the material conditions of life without which there could be no food supplies. They contain grouped elements of oxygen, nitrogen, hydrogen, and carbon, out of which living structures are reared. Life is dependent upon food supplies of matter, which supplies must be raised to radiant conditions by *electric forces* to secure its assimilation into living organic

forms. Life therefore like light seeks through magnetic action a radiant plane of matter where it can reveal its working presence.

Upon such a plain all forms of life come to birth from a common parentage,—from electric force and radiant matter, each form endowed with personality, and powers of production, that make them factors of life and growth upon the radiant plane of creative potencies.

In this electrical radiant elementary plane of matter, to which all forms of matter are transparent as the atmosphere is to sunlight, we find the material basis of all material life. The electric affinities in matter proclaim an electrical origin. This brings the problem of life to its nearest scientific solution. Here the mysteries of the origin of life is but little greater than the miracle of its continuance. By tracing the elements of matter to their source in electrical and magnetic energy we have reached the ultima thule and dug into the foundation upon which is built the eternal structures of the universe and the bounds of all creation.

It is as far as the wisest scientist can go ; and yet he has not reached the eternal mystery of God or life, or the essence of the undying soul. He has but fixed the natural boundaries at which complex forms of organic life take up their progressive orders of being. Science has been unable to discover the presence of indwelling intelligence at any of the sources of material life.

The conditions of life in its radiant elemental forms and in the protoplasm, disclose no soul powers, or spiritual affinities in matter ; and yet the perfection of the immutable laws by which they are guided shows there is above and around them an Omniscient lawgiver, a divine intelligence, an Omnipotent spiritual power “unsearchable and past finding out.” Here the eternal intelligent spirit of man must recognize the work of his eternal spiritual father,

and reasoning from the known in matter to the unknown in matter and the known in revelations, exclaim "The heavens declare the glory of God, and the firmament showeth his handiwork."

CHAPTER VII.

ELECTRICITY IS THE GREAT CHEMIST, WONDER-WORKER AND WORLD-BUILDER.

ELECTRICITY is the great chemist and wonder-worker of the universe. Why? Because it mixes and compounds all the elements of nature. It unites all the properties of water, all the elements of air, all the composition of metals, and forms all the homogeneous and heterogeneous substances of earth. It not only forms all visible objects, by producing and controlling the motion of atoms, and enforcing the laws of selection and affinity; but it reduces them back to their original elements, causes the purification of nature, and preserves the immortality of atoms.

At the behest of the Divine Spirit, it wrought the wonders of boundless creation. It took the invisible solution of etheric atoms scattered through the void of space, and by the law of evolution shaped them into all the diversified forms and organisms of nature. It mixed in just proportion to the laws of life the elements of air and water, earth and seas. It caused the forms and growth of vegetable life, the organism of all animal structure, the survival of the fittest, and the development and modifications of species by the laws of descent and environments. It built and shaped the structure of the universe. It constructed suns and planets, satellites and comets. It formed the sunbeam and the dewdrop, the prismatic colors of the rainbow, and set the tiny battery in the pulsing protoplasm, and the gigantic magnet in the blazing suns. It shoots the lightning through the clouded heavens with potentiality of a billion

volts to send it one mile athwart the horizon. Who can estimate its power, for by its invisible force it whirls the earth around its axis like a swift revolving wheel, and shoots it through space forty times faster than a cannon ball. It impresses spiritual law upon all matter, and is found in all atoms. It sits at the throne of physical life, and works the miracle of health and growth.

We have all heard of the wonderful "X-rays," and the benefits they may be to science in penetrating dense substances, and making visible the internal organs of the body. So that by its wonderful rays the bones and skeleton of man and animals may be examined. And even now by its use the action of the human heart, and brain, and stomach, are being investigated in the interest of science. And some are claiming that the mysterious action of thought, and ideality are pictured and made visible in the brain, and their tracery and lineaments may be photographed by its means. So that it would not be so wonderful a miracle for science by means of these electrical agents in a few decades to lay bare the secrets of the physical organism, and the mysteries of thought, and mental action. The "X-rays" are but the electric currents or element in light concentrated and intensified. Electricity performs the miracle of digestion and assimilation of food and the purification of the blood. It produces health and growth and decay and dissolution, and is the law of vitality and physical atoms.

The recent news comes from Harvard University, that Professor Trowbridge is a new Jupiter of science who hurls his own thunderbolts, measures the lightning's force, and has constructed an apparatus that upsets all time-honored theories. He has caused flashes of lightning four feet long to pass through a vacuum, and produces queer photographic effects by turning the light on protected plates. Science is rapidly tearing aside the veil that hides the cause of all natural phenomena. Not content with tracking the

lightning to its lair, and forcing it to work for the comfort of man instead of terrifying, and occasionally killing him, it is now able to gauge the tremendous force behind it, that sends it to the earth in a flash, and to manufacture machine-made lightning. Professor Trowbridge found that to produce his four feet of lightning it took 1,200,000 volts, and the length of the flash varied directly with the force which is necessary to produce it. He then made the calculation that for the discharge of a flash of lightning one mile long, at least 1,000,000,000 volts would be required, showing the immense force that nature has stored away in her aerial workshop.

It also upsets a scientific theory that has long been undisputed, and that is that electric sparks avoid a vacuum. But the powerful discharge from this machine shows no such shyness, and the vacuum seems to have no power to resist them. The discharge through the so-called vacuum tubes were of a dazzling X-ray nature, and the skeleton of the hand could be plainly seen by their aid. This is destined to change the scientific conception of what constitutes a vacuum, and upset many theories.

The photographic phenomena of this powerful machine are startling, showing various curious electrical effects which are invisible to the eyes, and may bring to light many wonderful things in connection with the mysterious action of electricity in passing through the air, and the rarefied spaces between us and the sun, which are ordinarily called a vacuum, and have been supposed to be a non-conductor of electricity.

When we recognize the fact that it takes a billion of volts to send a flash of lightning one mile through the air, am I not justified in saying it is the most powerful force, and the only force in nature, that could work the miracle of creation. That it is the wonder-worker of the universe,—that it wrought the framework of worlds and stars, and

glowing constellations, and sent them forth as from the plastic hand of Deity to swing in the revolving cycles of the countless spheres. The master-builder of the universe, the architect of the eternal spirit.

In the science of chemistry there are mathematic formulas by which atoms of matter of which chemists can gain no actual knowledge are united together in chemical unions under the rigid laws of atomic affinities. Thus they find, *all ponderable combinations of matter are built up from and by the unseen and imponderable.*

In the formation of water two gases, oxygen and hydrogen unite in the proportion of eight parts oxygen to one of hydrogen. These gases the chemist may mete out but there is demanded the energy of an electric shock to form the union, and this third element of power converts the union of the two gases into a new body. In this chemical union there is revealed the presence of a creative energy from the unseen and imponderable forces that is not included in matter in its three states—this is electricity, without which there could be no union of the elements of water, and no life upon the earth.

Again the salt held in solution in the waters of the ocean has electric affinities and prevents stagnation and impurity, and enhances evaporation which is necessary to the preservation of all life, and here electric energy presides over the union of sodium and chlorine creating a new form of matter or substance. Electro-positive sodium, and electro-negative chlorine unite according to the great law of electro-magnetism, namely unlike elements attract while like elements repel. Chemistry gives us nature's formula for the second or liquid state of matter,—three gases, oxygen, hydrogen, and chlorine, one metal, sodium, two of the elements, sodium and hydrogen being electro-positive, and two oxygen and chlorine electro-negative, these elements thus *bound together* cover two-thirds of the earth, and is the

preservative of all life on the planet. Here again we find electrical energy the creating and preserving force on our planet. In like rigid formula is the solid state of matter formed. The dominating element or substance is carbon, which is necessary to both animal and vegetable life, and is an electro-positive element, and at a high temperature has a strong affinity for oxygen. It is indestructible in the heat of combustion and in its union with hydrogen and oxygen the cells of plants, trees and vegetables are built up in the magnetic heat of the sunbeam. Without this wonderful element of plant life, animal life, and large portions of rock structures the continents could not have been built. The same laws of electro-magnetism apply to it, and control all atoms, organic structures and affinities whether solid, liquid or gaseous: so that we may affirm that electricity is a dual substance, force or energy permeating all the elements of earth-building and which commands and preserves all creative work.

It is the elementary all-indomitable creative power that controls, visible and invisible matter whether in one atom or an aggregation constituting suns and worlds.

It was at "the beginning" and sprang forth in response to the divine fiat "Let there be light," and it has been the world-builder, life creator, and universe preserver, with tireless, ever-balanced, perpetual motion in atoms, worlds and space, with the sweep of Omnipotent strength, and the velocity of lightning.

We learn that there are three states of matter, the solid, the liquid, and the gaseous. Professor Crookes says there is "a fourth state of matter," which he names the "ultra-gaseous." And Minor calls the fourth "gaseous and electro-magnetic." (In this classification light, heat, gravity, electricity and magnetism are left out, except by Minor, who thinks the electro-magnetic should be included.) And yet he can give no definition of this fourth or elementary

state for he says " we cannot ask after source, boundaries or foundation of either the elements or the energy that sweeps through space with the invisible flow of the electric and magnetic waves. Like space and gravity there is nothing thinkable beyond, beneath, above or before them."

Electro-magnetic attraction like the power of falling weights pulls the atomic forms of matter like raindrops toward the gravital centres of the worlds of space, and repulsion lifts them again in mist from the ocean, and in waste gases from decaying matter, back to a place among the elements of space from which they had been taken. Their energies are the carrying and transmuting forces of matter producing its changes, its motion and velocities, and fixing its paths of revolution.

Professor Tyndall says " we conclude heat and electricity are modes of motion, we know that from electricity we can get heat, and from heat we can get electricity. But our ideas are very unclear as to the precise nature of the change,—in fact we know as yet nothing about it." Certainly not when they are but different expressions of the same force. It would be just as sensible to speak of the modes of a sunbeam, or the fashion of a cyclone.

Matter and the forces that now touch matter in every atom are supposed to have separate beginnings, and been brought together by a special creation. The beginning of creation marked the period when matter and the cosmic electric forces were blended, which unfold life forms wherever atmosphere, light, heat and moisture give living environments.

The distinction between matter and the invisible forces that move matter have never been clearly drawn, while the distinction between mind and matter are treated as a basic principle.

Rocks, mountains and plains, rivers, seas and oceans, vegetables, shrubs, trees and animals, are all built into

place under the unfailing providence of these benign, invisible forces of sun and planet.

Space is not a vacuum, but rather the home of these forces, whence came all motion, and the perennial fountain out of which come the forms of creative work, as vegetable, tree and animal, which are woven out of these electric sun forces and earth forces, establishing germ centres, and unfolding all possible forms of body and of life.

The sweep of planets like the earth one thousand miles in a minute of time reveal the wonderful force of invisible electro-magnetism.

Both the light of the sun and the atmosphere are necessary to plant life and animal life, but the great sovereign builder is the sun forces, which gives the chief supply of carbon to plants and oxygen to animal life, and store the same in the rock-ribbed structure of the earth. The sun energy not only builds up but decomposes and builds again.

Draper says "the light and heat that warm and illuminate our dwellings, and the light of the sun's rays are the same. Force cannot be created, it came from the sun. When we read by gas or by the rays of a petroleum lamp, the light we use was derived from the sun perhaps millions of years ago."

Carbon and oxygen are termed "flame-giving compounds," they are derived from the atmosphere and the sun. But whence came the sun? Draper says "he is the issue of nebular condensation."

But whence came the nebula? and whence the power of condensation? We answer, nebula came from the invisible etheric atoms, or elementary, imponderable matter of space, and the power of condensation from electrical attraction.

Thus nebular condensation into worlds and organic forms, has been carried forward under the balancing energies of electric attraction and repulsion; and they held nebulous matter under control then as they now control the

great globes of the solar system, and all their organic structures.

Some scientists think "It is difficult to separate atoms of matter from the energy of matter." They affirm "that the *energy* of world-building is in the atom, as truly as the *material* of world-building." This is true, since electricity in some form pervades all atoms, all matter, and all worlds. These could have neither motion, affinity nor vitality without it. But it is a distinct entity poured into it, or surging through it, as water in a sponge, or as blood through animal organism. It is not an integral elemental part of matter, yet it is essential to its life and activity, and is the soul of matter, the invisible, controlling spirit of matter, as intelligent soul or spirit is the controlling force in man's body.

This electrical sun energy which is associated with all atoms and matter, has a never ending cycle from the sun to the plant and the animal now in the air, now a part of the plant or animal, now back again in the air. Derived from the sunbeam, it lay hidden in plant or animal, awaiting its release under the form of heat or decomposition, and then remingling with the universal electrical cosmic forces from which it had been of old derived from the sun, or from which the sun himself was derived.

Thus the cycle is complete from electric cosmic energy and atoms of space through the sunlight, heat and energy to plant forms and animal forms, back through the flame of combustion, or the release of decomposition to electric cosmic conditions of sun and space.

Balfour Stewart declares "a simple elementary atom is truly an immortal being, and enjoys the privilege of remaining unaltered, and essentially unaffected amid the most powerful blows that can be dealt against it. It is in a state of ceaseless activity and change of form, but it is nevertheless always the same. This ceaseless activity is a barrier

to an intimate acquaintance with molecules and atoms. The limit upon our senses with respect to space and time preclude our acquaintance with these exceedingly minute bodies which are the raw materials of which the whole universe is built." These "immortal atoms and raw material," give substance and form to all the varied combinations of matter, and are built up under the constant working energy of the electro-magnetic forces, which forces are Newton's law of universal gravitation in its fullest, broadest sense. Thus we reach material universal unity, which the law of Kepler taught, and which the electro-positive and negative teach, and which electro-chemical action and uniformity of light from all worlds in all ages confirm.

Professor Elihu Thomson has invented a remarkable process called electric welding. With electric currents he speedily melts bars of iron and other metals and welds them together so that the strength at that point is superior to that at any other portion of the rods. Metals can thus be welded together which cannot be joined by brazing or soldering. By this process the heat is applied at the exact point, great heat is developed, the bars are raised to a white heat at their junction, and are then pushed together.

This process is used in welding shells used in warfare, and annealing steel armor-plates, which are so hard they resist the action of ordinary tools, and have to be softened in order to allow the boring for bolts.

It is said our inventors have been unconsciously imitating lightning in producing dynamos which will give to and fro, or fluctuating currents, for every bolt of lightning is not one continuous discharge, but an alternating current which pulsates to and fro ten or twelve times or even more in the millionth of a second.

The ordinary electric car is propelled by a dynamo which is similar to the dynamo at the central station which generates the continuous current of electricity utilized by the

dynamo motor in the car. The dynamo motor can be made to generate a continuous current if necessary ; one dynamo can thus be the counterpart of the other. The motor can be made the generator, or the generator the motor. Recent success in transmitting power over twenty-one miles is due to the alternating motor.

All forms of vegetable and animal life are electrical machines. The primordial cell is a simple tiny galvanic battery. So are all plants, some of which are so full of electricity they are called electric plants. So are the tiniest bugs and insects. So are the largest, and smallest animals, from the ant to the elephant, from the butterfly to man. They are all electrical machines, and their physical atoms, limbs and functions are influenced and controlled by electricity. In man, and in nearly all animals the electrical battery is in the head or brain, and from thence it sends out along the spinal column and nerves the life-giving electric currents, and receives in return by electric currents reports from all parts of the body. There are also smaller batteries, or stored electricity in many parts of the body. All this is well known and accepted by anatomists.

Physicians now recognize the importance of electricity to the health and strength of the body, and all kinds of electrical contrivances are now used to restore health and strength. There are of recent years, many electric physicians who restore strength and health to the feeble and sick by the electricity from their own bodies. By manipulating the diseased parts they restore them to their normal condition by supplying the electricity needed.

Man's body is an electrical machine, and electricity can be conveyed from one body to another. This largely accounts for mesmerism, hypnotism, and all forms of animal magnetism. It also, not infrequently saves the lives of very sick and weak persons to have them come in contact with a vigorous human body, the electricity therefrom bringing

renewed life and strength. One mother told me she had saved the lives of two of her children, when they were infants and very weak by continually holding them close to her body. That she discovered that when she laid them down the flickering spark of life almost went out, and only recovered when she pressed them close to her body.

It is said that "light, heat, gravitation, mechanical force, electricity, magnetism and chemical affinity have been regarded as outside the universe of matter; while space has been regarded as a vacuum simply affording a place for grand velocities." Yet out of these realms come all the grand facts and forces that control the three visible forms of matter, solid, liquid and gaseous. From thence come the wonderful phenomena of life, soul, spirit, thought, consciousness, with all the elements of mind force. It is the magnetic field from which come all the changes of matter, and all that we know of life. In the veiled mysteries of these invisible realities is the realm of immortality and pure spiritual existences.

Our knowledge of this radiant, imponderable state of matter must begin with matter in its solid or ponderable state. Mind or spirit in material structures stands back in the dim invisible shadows beyond the last of the long series of involving forms of matter.

Matter in its radiant or diffused state is not only without weight, but lifts weights, in its solid state it is seemingly without power, and is called dead or inert, while in its liquid state it has only the power of position, like a falling weight. Faraday saw lines of force traversing all space, and a medium through which they were manifested.

Says Professor Mayer all material phenomena come into our field of vision as effects produced by an unseen potency. This potency consists of a universal presence surrounding bodies of matter in space, weaving around them lines of force of infinite fineness equal to the measure of the ele-

mentary atoms of which such bodies have been formed. For the magnetic field of radiant matter surrounding the body is as truly a part of "its complete structure as are the solids, liquids and gases of its sensible form."

The same author says "The sweep of the great circular paths of the planets around the sun reveals a constant energy of repulsion, equal to the sun's energy of attraction." These two forces of electrical energy deny the law of inertia in matter and proclaim the eternal, perpetual motion of atoms.

These occult forces working through all of matter that is gathered in planetary form, saturate such planetary bodies with occult electric energy as the steel of the magnet is saturated with such forces.

The electric radiant matter revealed in a sunbeam is the source of all power upon the earth, and their electric currents carry with them a power no ingenuity of man can measure.

"In the beginning God created the heavens and the earth," this creation was wrought out by the agency of electrical forces operating on invisible elementary matter, controlled by the intellectual impulse of an infinite power.

It seems impossible that divine power or impulse or spirit could work directly upon matter, it must work through a medium or agency. It could not impart velocity to planetary bodies by a spiritual agency equal to the so-called attraction of gravitation between bodies of matter, giving them a compound energy of half spirit and half matter, securing a velocity of thirty miles in a second of time. But the eternal creative spirit using the marvelous creating forces of electricity first spoken into existence by the word of his spiritual power through their perpetual ever-working influence on invisible ether on elementary forms of matter evolved all the varied forms of creation. Thus by creating electricity and condensing the sun and planets

into vast magnets revolving in a sea of electro-magnetic forces, the marvellous machinery of the universe was constructed.

This machinery of the universe became self-propelling and self-sustaining by reason of the laws of motion, growth and evolution impressed upon it, or by the joint sovereignty of two equal correlative forces, magnetism, a form of electricity maintains the sovereignty of attraction over matter in body, while electricity, another phase of the same forces, maintains the sovereignty of repulsion over matter in space. Thus electricity is a universal power joining together the two kingdoms of the heavens and the earth—of matter in body, and matter in space. And these forces in their unity of harmonious work can suffer no disturbance equal to “the dust of the balance.” These forces working on invisible atoms, molecules, and suns and worlds give organic unity and universal harmony.

These floods of electricity and magnetism effect the least and the greatest—“directly as mass, and inversely as the square of the distance.”

The sun and planets are vast magnets because they are held in charge of electro-magnetic forces in an immense magnetic field. These forces are not from these bodies originally, but these bodies are from the forces.

The primary state of matter is the diffused etheric invisible radiant state, and the building of matter into body is the work of these forces when in charge of matter under organic affinities. Magnetic lines of force fix centres and build around such centres by drawing elemental matter from the radiant sea of space by magnetic energy into globular forms that become growing worlds; drawing their power and increase of form from the sea of invisible matter in which they are fixed by their axis and orbit lines of motion and force constituting them working electro-magnets. These are the eternal cosmic forces of perpetual

motion ever working, ever evolving and building world forms, vegetable and animal forms.

The sun having grown from the sea of invisible etheric nebulous matter by means of these wonderful electric-magnetic forces into an immense magnet larger than all the planets of the solar system combined ; holds them in the magnetic field of his sovereign power, and is through these flowing currents of electricity the creating, governing force in the solar system. These same electric forces are formed into smaller magnets and electric machines which form electric centres, and build up all tangible forms of matter, human, animal and vegetable.

Without these floods of electric substance or power that come to us in the light of the sun, that flow in currents of strength through our bodies as they propel the inflowing and outflowing floods of atomic elements of matter that are laden with incoming supplies of daily life, and outgoing wastes, by attraction and repulsion, assimilation of food, respiration and perspiration, our bodily forms would be wholly unfit for the dwelling place of our spirits.

Our hearing, seeing, tasting, smelling, feeling that connect us with the world of matter are entirely dependent on electricity and the invisible etheric forms of matter that surround us everywhere, and constitute the connecting ties, the invisible ligaments that pervade and bind all forms of life in nature's wondrous harmony.

The chemists have discovered and numbered sixty-four elementary substances in matter, yet they are largely varied combinations of each other, and like solids, liquids, and gases and invisible ether are different forms of the ever-changing atoms, but eternally the same indestructible matter.

Sir John Herschel declares "The sun's rays are the ultimate source of almost every motion that takes place upon the surface of the earth. By its heat are produced

all winds, and those disturbances in the electric equilibrium which give rise to the phenomena of lightning, and the aurora. By their vivifying action vegetables draw support from inorganic matter and become in their turn supporters of animals and man, and the source of those great deposits of dynamic efficiency which are laid up for human use in our coal strata."

While this is true, it is also true that the radiant imponderable matter of universal space is the primary source of all material power, or universal energy. The sun is the vast fountain and receptacle of that marvelous electrical energy and virgin matter diffused through all space; but it is not necessarily the source of it. It is the central magnetic controlling source and expression of it through all the solar system. But other world systems have their controlling magnetic sun forces from the same exhaustless sources.

And the boundless fountains of infinite energy through measureless space are superior to any mere sun form of visible expression of such energy.

The flood of radiant electrical energy that saturate and enwrap the sun and planets in orbital lines of Omnipotent strength, are to these bodies the everlasting fountains from which flow their upholding and evolving power.

As all visible forms of matter are built from elementary atoms, so the most efficient display of electrical power finds their expression and source in the same elementary atoms.

Professor Tyndall's experiments teach that the dark lines in the sun's rays have a greater chemical and heating power than the illuminated lines.

It is said "The universe of matter can neither 'melt with fervent heat,' or 'be rolled together like a scroll,' so long as the cold, dark, silent forces of gravitation maintain their power over matter."

As the sun and earth are huge magnets, the poles of the

earth are reversed to those of the sun, and laws of magnetic attraction teach us that positive and negative polar forces flowing oppositely between sun and earth establish the bond of union between them. If this be so the transfer of electric energy must be equal between them, and the flow through space at the low level of latent energy. These two oppositely moving floods of electrical energy, passing under the great law of electro-magnetic attraction pass through ninety-two million miles of radiant matter in eight minutes of time, and enter the resisting atmosphere of sun and earth, their currents thrilling with energy at the high tension of opposite polarities beneath their atmospheric envelope, and by this means the attraction known as gravitation, or electro-magnetism pours a constant flood of light and heat upon both sun and planets. Thus the electric light and heat of the sun and planets of the solar system evolved from their resisting atmosphere, become creative potencies, deriving their vast power from each other, and from their environing space of virgin imponderable matter, and thereby giving life motion and utility to all visible created things.

According to this theory there is no solar waste, or planet waste, while the electro-magnetic creative power is evolved at the point of time and place in which the force is needed and the work accomplished.

CHAPTER VIII.

GOD CONTROLS THE UNIVERSE AS MAN CONTROLS HIS BODY— BY ELECTRICITY.

THE spirit of God "moving upon the face of the waters," the word of his power that spoke light and life into existence, "the breath of life" he breathed into man were but names for a reality, a means used, a something employed to accomplish a result. What were they?

The same oracles of divine truth assert that "God is a spirit." How can spirit speak to matter, or matter hear or feel the "word" or "movings of spirit"? There must be a means of communication, a connecting-link, a vehicle of perception, a medium of transmission of spiritual will and purpose to insensate matter. This should be invisible like thought? subtle like perception, and powerful like spirit. What substance or force in nature can approach these definitions, or is suitable for such a purpose? We answer, only one—electricity in its numerous forms and manifestations.

How does God control the universe? We answer, in the same way as man controls his body, by the forces of electricity operating upon matter. Back of these forces is the will of God, or the will of man, propelled by the living intelligent spirit. God is everywhere—in everything in all the universe, in every atom. Certainly, because electricity is there responsive to his every will, and working out his divine behests; just as every atom in man's body responds to the wish and purpose of his soul or spirit. Thus God is omnipresent and omnipotent. Just as the soul of man in a healthy body is omnipresent and omnipotent in that body.

Only God is infinite and eternal in his domain, and man is transitory and imperfect in the control of his fleeting tenement of clay.

All things originate and have their existence in God. "In him we live, move and have our being." How do we live, move and have our being in God?

The scriptures say he created us in his image, and breathed into us the breath of life and "man became a living soul." This "breath of life" is a part of the spirit of God, and constitutes the spiritual body of man. This spiritual body permeates every atom of the physical body, weaves its flesh through electric action, preserves its autonomy, and gives it intelligent vitalizing life and power.

The spiritual body in man thus controls the atoms and functions of his physical body in like manner as the creative spirit dominates and controls the physical universe.

As electricity is the right hand of God's power in governing all his visible creations, and the connecting-link between spirit and matter, so is it the right-hand of the soul of man in controlling through the dictates of spirit his physical body. It is the medium of communication between soul and insensate matter—it telegraphs the wish or the will, the thought or the impulse of mind to all its habiliments of flesh and nerve and blood.

It obeys man's spiritual and reasoning faculties, and runs along the nerve tissues as along connecting wires causing the body to obey the behests of spirit, and preserves life and harmony there, as in the boundless universe.

Man has five senses,—seeing, hearing, feeling, smelling, tasting. These are all communicated to the soul or spiritual body by electricity. Man feels through the electric flashes that come from every part of his body,—that tingle on the nerves, beat upon the brain, and touch the garments of the living soul.

He sees through the medium of the electric etheric

waves of light that come from the vibrations of the air around him. The infinitesimal rays of etheric light enter the retina of the eye, and touch the quick vision of the soul.

He hears by the atmospheric waves of electricity that beat upon his ear drums, and strike the sensitive chords of the listening spirit. He tastes and smells by the same electric process, and his five senses are but the outward communication of surrounding conditions and substances, to his mental or spiritual perception, by means of electricity.

Truly, this wonderful substance gives marvelous touch and activity to the human hand, and skill to the deft fingers, as they are directed by the majesty of mind.

It makes the soul vibrate with exquisite pleasure or keenest pain, as it tenders to its spiritual seeing, feeling, throbbing master the external proofs of surrounding things and conditions.

Thus, God from the spiritual centre of the universe sees, hears and knows all things. The electric flashes from the centre to the circumferences of creation touch the hem of his mystic garments, and fall in beautiful rainbows at his feet. They bring to him the music of the singing spheres, and the silence of untenanted space speaks to him in the "still small voice" of the refined, electric currents. They bear his thoughts on the wings of invisible lightning and carry his saints to their eternal rest by his great white throne. They write his name on the granite hills, and in the rock-ribbed foundations of the earth they explode the earthquake, tread the pathway of the cyclone, and spread the fiery tresses of the blazing comet. They throw the aurora of eternal brightness above his fadeless brow, and canopy the dome of heaven with diamond coronets. They glisten in the sea of glass, and burnish the streets of gold, and make his abode the centre of universal power.

This is one reason why I contend that the suns of the

universe are the spiritual centres of the universe, and the abodes of Deity.

He dwells at the centre of all power, and in all created things the intelligent or spiritual directing and controlling power is always at the electric centre of all force and power. This in the sun systems is the sun, as in our solar system, and here is the only natural reasonable abode of Deity and his archangels. And it is also the only place in the known universe that could possibly cover the Bible description of heaven, a place where there is "no need of a sun," or moon, and "where there is no night." It is also the only place where gold and all precious stones are likely to be so abundant, that the walls of their cities are of jasper, and onyx, and rubies and pearls, and the streets are of gold. Where from the brilliancy of electric illumination there is the great white throne and him that sits thereon, so brilliant that no mortal can look upon his face and live, and the lakes glisten in the brilliancy of the great electric illumination like seas of glass.

Since the most recent knowledge of electricity, and the electric phenomena of its photosphere justify the conclusion that the sun is inhabitable, and presents the most heavenly conditions of life, it is a most reasonable conclusion, that it is the promised heaven of the good and faithful in our solar system. There God or his viceroy reigns in supreme beneficent power.

In our solar system at its sun centre God the Father may be represented by Christ, the son and redeemer of men, while the Great Eternal Spiritual Father may dwell in the vast central sun Alpha Lyra, or Siris, or Alcyone; suns many thousand times larger than our own and billions of miles distant from the earth. Here all the electric forces of the universe centre and converge and diverge, carrying their life-giving energies to every star and world. And there the Almighty Creator rules in supreme beneficence,

while electric and spiritual floods of light and life and joy sweep forth in mighty circles of resistless love and power. And from thence the invisible arms of electricity, which are the silent shadow and invisible arms of Deity reach forth in their cycles of measureless strength and uphold the universe.

Through these mysterious electrical forces he maintains the fearful velocities of suns and worlds, and holds all things in the grasp of his intellectual spiritual sovereignty. Thus, through the invisible electric nerves of suns and space he sees, and hears, and knows all things, and rules the universe as man, sees, and hears and feels, and rules his own limited universe, his transient earthly body. Christianity should not fear to localize the central dwelling place of God or heaven. That he has one none will question. And he gave us reason for the purpose that we might discover his laws, his dwelling place, and the nature and purposes of all creation.

Man will finally learn all these things. Then the godlike in aspiration will attain to the godlike in knowledge, for there is no limit to the possible bounds of knowledge in God's universe. And what we do not learn here, we will learn in the hereafter; and all aspiring souls shall ultimately reach the glorious ideal realm of perfect knowledge and perfect happiness, whether it be in the sun, Alpha Lyra, Alcyone or elsewhere. This is the field of pure speculation, but from such a field have come at length all the facts and demonstrations of science. If my hypothesis cannot be demonstrated, the same is true of half the accepted truths of science; and as suggestion and as theory is the initial step in the acquiring of knowledge, mine may lead some scientist to more closely investigate these untrodden fields.

My conviction is positive reasoning from accepted scientific facts, that God rules the universe as man rules his

body—by electricity. That his abode or dwelling place is at the seat of central electric power—the suns; that they are inhabitable and occupied by the highest orders of intelligent beings. That they are the promised heaven or place of perfection to the inhabitants of each solar system of worlds and planets, and the only places in the physical universe that fulfil the Bible description of heaven. All nations have localized their gods and their heaven here on earth. The Greeks made their gods dwell just above the clouds and made them descend to Mount Olympus periodically to discuss and take part in the affairs of men. The same is true of the Romans and Egyptians. Only the Hebrews and Christians worship a God of Omnipotence dwelling in the far-off realms of the universe.

CHAPTER IX.

**MAN IS BEGINNING TO USE ELECTRICITY AS GOD USES IT TO
BLESS AND CONTROL THE WORLD.**

ELECTRICITY has solved many of the great problems of human life, and opened a pathway of earthly existence that promises more than the Utopian dreams of the wisest philosopher. Franklin, Morse, Edison, Tesla and others have learned to control the mysterious and immeasurable energy that is the origin and sustainer of life upon the planet. They have harnessed the electric fires of the sun to do their bidding, and work at their command. They flash living thoughts around the world, they light and heat houses of luxury and turn the wheels of commerce. The discovery and utility of electricity is like the dream of a god. It means that it can drive every wheel that revolves, make the night as brilliant as day, and give to the poorest home the generous warmth and light that illumines the mansion of the millionaire. It has produced the telegraph, the telephone, the phonograph, the electric light, the X-rays, the dynamo, the electric motor and railway, and brought innumerable blessings to the race.

Even now the public press are discanting on the wonderful invention of Edison which is to convert the motion of the waves of the ocean into electric power. He is to build works and machinery out at Sandy Hook, utilizing the action of the sea by which the great city of New York may be heated and lighted and its machinery propeled at nominal expense.

And it is also stated that that other great genius, Nichola Tesla, has invented a machinery and process by which the

sun's rays can be focused and utilized to turn all the wheels of commerce and manufacture, and light and heat cities and towns at the trifling cost of two cents a day to each home lighted and heated. One will capture the forces that agitate the sea, the other extract from the rays of the sun the electric forces of light, heat and power that give life and energy to the solar system.

Tesla, who is now planning to build an immense sun plant on Long Island, says in the *New York World*, of December 6, 1897, "As to the cost to the individual citizen of heat, light and power when generated by means of the rays of the sun I think in a few years it will be merely nominal. I should not be surprised if every large city in the world should have a number of electric stations of this kind completed in two years, and after first cost of construction had been defrayed by public tax, the mere cost of maintenance would place the individual heat and light at less per month than the price of a few bushels of coal. Vast trouble the human race will avoid in using only a natural substance as the heat of the sun to do its work. It is clearly probable that the day is surely coming when no human being will be forced to do any kind of manual work. The time does not seem far distant when man will be able to desist from all mere brute labor, and pass his whole life in contented enjoyment of the state of things brought about by his own ingenuity in harnessing the elements to his peculiar advantage." He further adds, "Most people will contend that the plan to harness the rays of the sun to compel them to operate machinery of man and give light and heat is the idle fancy of a dreamer. I would indeed be surprised if they were to contend otherwise. There has never yet been proposed a single big scientific enterprise that has not at first been met with ridicule, and laughed at as being something beyond the bounds of possibility. It was so in the days of horse cars, when electric street railways were first

talked about as possibilities. It will be the same with the motive power generated by harnessing the rays of the sun. The first two months that the generating stations are in operation they will be places of interest, but after that the people will think no more about them except as business places. I am certain that the new apparatus will come into speedy and general use. Its cost is so insignificant it cannot be ignored." Thus speaks with assurance one of the two greatest electric inventors and geniuses of this marvelous age.

Various experiments made with solar engines by the French in Algeria where the sun is never overclouded, and shines with great power, has been attended with marked success. The best apparatus is said to be a simple arrangement of boiler and concave mirror, the steam generated being condensed in a coiled tube surrounded by water, this being intended merely for distilling water. In India an inventor has contrived machines with which more varied results are accomplished. One of these, a cooking box is made of wood, and lined with reflecting mirrors; at the bottom of the box is a small copper boiler covered with glass to retain the heat of the rays concentrated by the rays upon the boiler. In this contrivance any kind of food may be quickly cooked, the result being a stew or boil if the steam is retained, and if allowed to escape, a bake. The heat with this device may be augmented indefinitely by increasing the diameter of the box.

Thus it may be but a short time until the world will be cooking, heating and lighting, and running all the wheels of commerce by the use of the direct electric rays of the sun. But this is not all, surprising results in vegetable growth have been obtained by electricity, so that it may furnish the vegetables and food, beside furnishing the light and heat for cooking them.

Experiments from government agricultural station

Amherst, Mass., indicate that electricity is soon to do for the farmer, as much as it has done for the pampered urbanite. The idea that electric currents introduced beneath growing crops would materially hasten growth, and improve quality and quantity, has been a scientific belief, and recently a practical means of testing this knowledge has been devised. An invention called the geomagnetifere successfully tested at Amherst proves the theory correct. It consists of a pole fifty feet high surmounted by a crown of copper spikes. These spikes collect the electricity in the atmosphere and it is conducted by the poles into the ground, where wires buried five or six feet beneath the surface distribute it throughout the area of the farm. One pole suffices for several acres, and entails no operating expense. Experiment shows that by the use of the geomagnetifere the product has been doubled. Radishes have been produced eighteen inches long and six inches in diameter. Pansies were made to blossom in a week, and roses in ten days. The color and fragrance of flowers were greatly intensified. In short, nature by this electric device has been keyed up to double duty, without apparent hurt to her vitality. The saccharine yield of sugar beets increased thirty per cent., and in the beet industry alone this achievement will be worth millions to the nation. Electric light is also used for stimulating the growth of plants, and its effect has been to hasten the maturity of lettuce, spinach and similar products.

But these experiments are just beginnig to be made on a large scale. Professor L. H. Bailey, of Cornell University, has been asked to go to Finland to conduct a series of experiments in electric plant growing in connection with Professor Lemstrom, of the University of Helsingfors. They have nothing to do with electric light, or the running of electric wires through the soil to force the growth of plants by direct current stimulation. They are to be

based on observations made by Lemstrom on the effect of the aurora borealis on the plant growth of the north.

It is a well-known fact that plants of the north arrive at maturity in a much shorter period than those grown further south. This is necessary as the summer season there is brief, and it has been considered a wise provision of providence that they were enabled to accomplish their purpose in life in so short a space of time.

However, science is rapidly discovering providence and electricity are nearly related. And so Professor Lemstrom thinks, for he discards the providential idea, and states the rapid growth of plants in the north is due directly to the light of the aurora borealis, and the large amount of atmospheric electricity which causes its presence.

Lemstrom has been carrying on a series of experiments, and now in conjunction with Professor Bailey proposes to extend them on a larger scale, in the way of an electric farm of a decidedly picturesque character. It is proposed to erect a line of posts around this farm with wires stretched through the air at convenient distances. Small knobs or points will project. A static current such as produced by the Holtz machine will be sent over the wires, and will be allowed to jump across the open space between the wires from one point or knob to another. Thus a constant flow of electricity will be obtained, and the atmosphere saturated with the current. At night the scene would be very picturesque, with the tiny points of flame jumping from wire to wire and from knob to knob, in a background of darkness, that would make it seem a fable farm from fairyland.

Professor Bailey says, "Our contemplated experiments point the application of atmospheric electricity to the growth of plants. Lemstrom and myself have devised a scheme by which we are to work in unison—some work to be carried on in Finland and some in America. I go to Finland to look over his experiments, by which he shows

the influence of the aurora on the atmosphere and plant growth, through the electrification of the atmosphere. He went to Spitzburgen and investigated the electrical phenomena and the meteorology of plant growing. I have recently pointed out to the Massachusetts horticultural society the great effect which atmospheric electricity has on the growth of plants. Atmospheric electricity exerts a very powerful influence upon vegetation. The experiments of Grandeau determined this point. Grandeau found that plants deprived of atmospheric electricity gave fifty to seventy per cent. less bulk and fruit than plants subject to normal conditions, with free access of atmospheric electricity. Celi shortly afterward reached similar results. So did Leclerc. But by far the best investigations were those made in Finland and France by Lemstrom, physicist in the University of Helsingfors. His experiments showed thirty-five per cent. increase in the harvest, and greatly improved quality of the product."

The various uses of electricity are not yet exhausted. We have said it performed the miracle of digestion and assimilation of food, the purification of the blood, adjusted the properties of the air to the needs of vegetable and animal life, and brought the healthful ozone from the skies. It would take a volume to enumerate the known uses of electricity. I will quote briefly from a recent lecture by Professor Albert Woolf, of New York, on "Electric Purification." Speaking of antiseptics, he said, physicians now use them with great doubt and hesitation. He said "In a perfectly healthy body currents of electricity are flowing whose action upon the blood is the same as when the current passes through water, viz, the molecules of water arrange themselves in polarity, and the current jumps from molecule to molecule, and electrolysis or decomposition of the water, is the result. It is necessary to take a certain amount of salt into the body. The electricity decomposes

the salt in the blood, and this is nature's disinfectant, destroying disease germs. The disinfecting agent is ozone, or free oxygen which is produced by the electrolysis. Ozone produced in large quantities by the use of a dynamo, and tanks of salt water can be used as a disinfectant in any locality, at an economical cost, and is absolutely non-poisonous; while the disinfectants usually employed, viz, carbolic acid, corrosive sublimate, or sulphuric acid—are poisonous." These statements he illustrated by several experiments, one by the electrolytic action of the current by the insertion of the two poles of a battery into some sea water. Decomposition of both the water and salt was produced, freeing oxygen, hydrogen, chlorine, and sodium, which then formed new compounds. The gas bubbles could be seen passing to the positive and negative poles. By using a small quantity of this electrolyzed solution, Professor Woolf said, a very large quantity of water could be purified, or rid of germs, and by sprinkling it over fermenting matter like garbage heaps, all fermentation could be stopped.

"The quick growth of electricity has in twenty years revolutionized trade," says the *New York Times*. Its continuous "Marvelous progress has been made in the industrial application of electricity in recent years. It is little over twenty years ago since electric lights were first used commercially, now they are in almost universal use, and constantly increasing.

"Long distance transmission of power is an element of much consequence in electrical industrial developments. Through this water power can be utilized in places hitherto inaccessible. Important water power plants have been erected at Niagara Falls, Montreal, Blue Lakes, and other places. There will soon be in operation at Massena Falls a plant of 75,000 horse-power. In the Pacific coast mining districts, and elsewhere, long distance transmission of power has made it possible to work mines and industries, other-

wise impossible to operate. Electricity is gradually establishing itself in heavy railway work, long the undisputed field of steam locomotion and heavy trains are now being hauled by electric locomotives."

Electrical development has been steady and continuous. The telephone and phonograph, and electric photography, and electric ventilators, and a thousand other useful inventions have succeeded each other in rapid succession. A jeweler, D. Goodwin, of McKinney, Texas, has recently made an electric machine so small that he has placed it in a scarf pin no larger than a dime, where it buzzes like a small beehive. The dynamo is so small that it does not cover a silver dime and its weight is only nine-sixteenths of an ounce. The armature is about the size of a small slate pencil.

The flexibility of electricity, its use in the smallest and daintiest machines and the largest and most powerful is thus well illustrated. The force is so gentle and plastic and yet can be made so terrific, that no other force compares with it.

The Standard American Encyclopedia says, "Electricity though young, has already revolutionized the industrial methods of the world. It has come to employ immense capital, and there is no force from which more wonderful results may be expected in the future. Its properties are of such an extremely unusual kind as to appear almost magical, and when utilized, to produce results strangely unlike everything previously seen.

"As to the nature of electricity, one is led to infer it to be some form of atomic and molecular motion, for the reason that some kind of motion is necessary to produce it, and it is capable of being transformed into various kinds of motion, either of a large mass, or the molecules that make up a mass."

When a body is hammered or rubbed, the particles that

make up the body are agitated, and their vibrations we call heat. If the particles are similarly moved in any other way the same phenomena appears. When therefore electricity is made to pass through a conductor it shakes all the molecules in it; that is to say it heats it, and if the conductor be small and the amount of electricity considerable, the heat may be so great as to render the conductor incandescent, and therefore give out light. By this process the electric light is produced. One of the great advantages of electricity is that it can be led quietly and without much loss to the place where it is to be used, and there be converted into light, heat and power, or chemical action by a single change in the material of the conductor.

For practical purposes to produce continuous power it is most convenient to use a machine called a motor. A motor is so arranged that electricity traverses a wire wound in the form of one or more coils, many times around a suitable shaped frame of iron called a field magnet, or simply a field. The current so circulating around the field magnetizes, or as it is called, excites it, causing it to exert an attraction or pull upon another part of the machine known as the armature.

The armature is also wound with wire through which the current passes, and is placed between the extremes of the field magnet which are called poles. The electrical connections are so adjusted that the attraction or pull between the field and armature is up on one side of the armature and down on the other, thus causing the latter to rotate with any desired speed and power according to the size of the motor.

Thousands of these electric motors are at work transferring freight and passengers, running printing presses, lifting elevators, and making themselves generally useful at domestic and industrial service. The adaptability of the

motor for operating street railways has greatly popularized this wonderful force.

The electric dynamic forces controlled by the will of man seem adequate to any potential demand he may require. The great work of engineering performed at Hell Gate, near New York city is a well-known instance where tremendous dynamic forces were employed to remove an obstruction of massive granite rock in the way of navigation. The finger of a little child pressed the electric button, and the earth quivered and the solid rocks were shattered and lifted into the air like the plaything of a child by electrodynamic forces.

The current produced by one dynamo can if led to the wires of a second dynamo make the movable coils of the latter revolve. Thus, the second dynamo becomes a motor, and can be used to turn shafting or set in motion any form of machinery. Every electric car has a dynamo motor connected with its axle, and the current produced by the great dynamo at the central station sent over the trolley wire propels the electric car.

Currents of electricity of almost unlimited strength can be produced by the dynamo; and very powerful attracting magnets can be made; and the electric currents can be carried miles from the producing station, and transformed again into motion.

Five miles is the present limit of distance to which it can be economically carried in steady currents, but fluctuating currents can be carried much farther. And in five miles it is estimated there is a loss of fifty per cent. in transmitting the electric power.

By connecting the poles of a battery with a copper wire we convert this energy into electricity, and reconvert it into heat wherever the resistance of the line is sufficient.

The transformation of energy thus proceeds from chemical action through electrical action back to heat. Thus

we change motion into electricity, and convert electricity again into motion.

We have recently heard from Vienna of the wonderful telectroscope, so called because it renders objects visible in their natural colors at a distance by means of electricity. We now have the details of what is claimed to be an accomplished fact, and for which the commissioners of the Paris Exposition have paid more than a million dollars for the exposition and the French rights. It was evidently inspired by the cinematograph and gives some of the stirring effects of that machine.

Herr Szczepanik has favorably impressed the scientists of Europe, and they declare his invention to be a success.

The actual mechanism is a profound secret, but there are illustrations that show the principle involved. First, the transmitter which takes up the rays of light from a landscape that may be rich in inanimate objects and full of moving animate forms, changes then into electrical energy and transmits them along a conducting wire. The view may be in Paris, or an African jungle, or a painting. The light from this picture falls on a mirror which has its surface coated with an opaque substance through which a horizontal line is drawn with a pointed instrument, so that only a narrow strip of reflecting surface is exposed. This mirror is on a pivot that allows it to oscillate, so that the lines of the object under observation are continually changing.

Now the single line pictures are broken up into points by means of a second oscillating mirror, placed at right angles to the first. As the two lines intersect each other at a point, it follows that the reflection when it reaches the last mirror is only a single point over the object. These mirrors oscillate in unison by means of the connecting machinery operated by the electric motor which gets its power from the battery connected therewith. By this

means the two mirrors are always in the proper relation to each other.

Then comes the conversion of these points of light into electricity. This is done by the employment of the selenium cell, and is made possible by a peculiar property of selenium which is that its electrical resistance varies with the color of the light to which it is exposed. It receives different energies from different rays. While blue has a powerful effect on it, red will generate a weak current. As the mirrors oscillate and take up every point of the object, the light from each one strikes on the selenium and generates electric currents of varying intensity. These currents pulsating along the wire that leads to the receiving station, being an effect which becomes a cause and produces the object at the further end.

At the receiving end hundreds or thousands of miles away where the object is to be reproduced, the electrical energy must again return to light, and that is what the receiving apparatus does with it.

The electric energy by means of the wire reaches with its varying current an electro-magnet which moves a pivoted prism. The prism is adjusted so as to take up from the strong electric light the rays which correspond in color to the ones represented by the different pulsations of electric energy which is being momentarily received. If it is a very weak energy then the prism throws a red ray on the mirror, which in its turn reflects it to another mirror from where it goes to the screen—where the picture is formed.

These mirrors are constructed and operated the same way as at the transmitting station, and are operated by a motor and battery.

If the current received is a strong one, the prism will be turned to cast a blue ray on the first mirror, from where by means of the other mirror it reaches the screen. So it is *with all the varying colors of the object.*

As these color points follow each other in very rapid succession the eye of the observer will take in the impression of the entire picture as if its points were all presented simultaneously. Reproduction can make these pictures last as long as is necessary, and it is no more difficult to reproduce a moving picture than one at rest in all its parts, for the inventor explains that it is the actual picture which is reproduced, and not a mere record of it, as in the cinematograph.

Thus, man by these wonderful electrical contrivances can not only talk and communicate with each other when thousands of miles apart by means of telephone and telegraph, but by means of the telectroscope can actually see face to face the persons and surroundings of those with whom they talk. Another miracle of science and electricity.

There is a new invention to restore or protect the health, known as the electropoise. It is an instrument intended to correct such improper physical conditions as produce disease. It is said to be mildly electrical, promoting the absorption of oxygen, equalizing the circulation, purifying the blood, and inducing a normal distribution of nerve force, enabling each functional organ to perform the best work of which it is capable.

There are well-known electrical vegetable and animal organisms. Among the electric fish, there are two remarkable specimens, the torpedo found in the Orinoco and the electric eel of the genus *gymnotus*. The electrical apparatus that has made the torpedo famous occupies the space between the pectorals and the gills.

The electrical apparatus consists of four batteries. These batteries consist of a number of piles placed horizontally in direction from head to tail. The number of these piles in the greater battery is from 30 to 60, in the lesser from 8 to 14. These batteries are supplied by about 224 pairs of nerves on each side derived from the inferior or motor roots

of the spinal nerves. The shock of the torpedo and gymnotus gives rise to currents that deflect the galvanometer, magnetizes a needle and decomposes iodine of potassium; and from both fishes sparks have been obtained. There are other electric fish like the electrous of the Nile, and the thunder fish of the Arabs. Thus nature has constructed an electrical motor or dynamo in the body of a fish which man by his inventive genius had copied for his own use before he discovered this perfect model in the torpedo.

CHAPTER X.

MAN IS A SPECIAL CREATION, NOT A DEVELOPED MONKEY OR PROTOPLASM.

As before indicated, I claim that man is a special creation as set forth by Moses. That he was not developed by the law of evolution from a monkey or protoplasm—that he is not a freak of nature, or the product of growth and environments from the lowest to the highest order of animal life.

In the sequence of natural law the jump from the highest order of animal life to man is too great. The gulf could not be spanned by the steady and ordinary processes of nature, it required the intervention of a higher power. Man became an erect mammal, with larger brain, and freer limbs, and “a living soul” by reason not of growth or evolution, but by reason of the intervention of Creative Deity.

God created man from the dust of the earth truly, for from it are all visible things created, “God breathed into man the breath of life, and *man became a living soul.*” Surely this was a special creation, for man was not merely a breathing animal, but “a living soul.” This “living soul” constitutes the man. The maxim is universally acknowledged “It is the mind that makes the man.”

I do not undertake to say that God made an entirely new physical structure for man ignoring the growth and development of animal structure through all the ages. This is not in accord with the wise economy of nature, as all atoms and spheres are similar in form and structure. What I do say is that man’s bodily structure may be similar to the animal creation, and may according to the Darwinian theory have been evolved by long processes of evolution

from a primordial cell, a vegetable pulp, a jelly fish, a mammal, or a monkey, but that the step from the mammal or monkey to man was a special creation,—a recreation or remodeling of animal structure, and the creation of “a living soul,” which is the real man. In other words Darwin may be right and Moses also may be right, one follows the physical body, the other the soul or spiritual body. Moses dwelt upon the creation of the soul or spiritual body which he deemed most important, while Darwin was studying the origin of specie and tracing the similarity of structure in all animal forms.

As I have before indicated, if all matters is one matter, then it is of no consequence whether man's body was shaped and created in a day, a week or a year from the dust of the earth, from red clay or black mud, or the refuse of a dunghill from which come the most fragrant flowers and luscious fruits, or whether it was evolved through millions of years by the slow processes of nature from a protoplasm up through vegetable matter to the lower forms of animal life, and thence to the highest development of animal structure,—as the mammal or the monkey.

I have no quarrel with the law of evolution, or the Darwinian theory. I do not admit that there is necessarily a conflict between the Mosaic special creation of man, and the Darwinian theory that the bodily structure of man is similar to that of the monkey, or developed from the lower order of vegetable and animal life. This may be true, and still God may have made man a special creation. For if he took a fully developed mammal, stood him erect, straightened his limbs, enlarged his brain and gave him “a living soul,” that was a special creation. And this may be the creation Moses in the Bible record sets forth. Darwin followed the development of animal structure through the ages, and traced the similarity in man's body to that structure; but he never found the gradation upward of any

animal into a man. Neither he nor his followers have been able to discover after decades of search over all the earth, a man monkey, or a monkey man—or what is known as the connecting link. And they never will, for in the nature of things the gulf is too wide, and was never bridged; and man was a special creation, and Adam's body was made like the remodeled and perfected body of a mammal in this special creation, or a perfect living mammal was shaped into the body of Adam, and the breath of God's spirit breathed into him made him "a living soul."

Moses speaks of the perfected mammal, with a soul, which was certainly a new and special creation known as man. Darwin speaks only of the growth and structure of animal forms, and traces their evolution and likeness to man—he only traces the dust, and Moses traces the deity hid in the dust, which he calls man. There is no real conflict. It is not unlikely God used the animal structure that had been evolved and developed through his natural law, as the model for the bodily structure of man. It accords with his wisdom and economy in nature, to have but few models, and great simplicity and similarity in them all. Thus there is great similarity in the structure of suns and planets. There is great similarity in all vegetable structure and all mineral structure, in the structure of stellar systems and constellations, why not in all animal forms and structure? Similarity between man's body and that of all animal creation is no proof that man was not a special creation—and does not for a moment call in question the Mosaic account of man's creation.

I say that there is a distinction between man and the animals which all must admit, and that admission necessitates a special creation. A special creation accords with the very nature of things, and the eternal fitness of things, and Moses must be right. The Garden of Eden was long supposed to have been in the Valley of the Euphrates, and

most likely was, but recently some scholars investigating the antiquity of the human race say the Garden of Eden was in China. They claim that the civilization of Egypt did not come primarily from Assyria, but that China sent it there, taking Assyria as a stopping place on the way. They contend that if there was an ape ancestor he was a Chinese ape. The Chinese have always laid claims to their superior antiquity, and Christian scholars are beginning to accept their views on this point. However there is great diversity of opinion, some claiming the Garden of Eden was in America. But the location is not material.

The only thing that is material, is the fact of a special creation, which Moses affirms, and which accords with both reason and nature.

Unless we deny man has a soul, we must admit there was a special creation, for the bestowing of that soul even upon an animal—a monkey, made a new and special creation which was more than a monkey. Which was a reasoning immortal living spiritual existence, that lifted it above the mere animal creation. This is accepting the strongest possible conclusions of Darwinism, if they admit man has a soul. If they deny man has a soul, or a spiritual being above the animal creation, then they fly in the face of all history, all facts, all reason, and all self-consciousness in man. They must assume that matter has intelligence, and animal organism is the only source of reasoning power, and man's reason and spiritual power is only a higher order of animal instinct.

This is an untenable position as I have demonstrated elsewhere.

The Bible says "God is a spirit," and this spirit made man in his own image, and "gave him dominion over the beasts of the field and over all the earth."

That dominion he has increased, and held in all the ages, showing he is more than an animal, he is a ruler, and a god

over the animal creation. The spiritual power with which he was endowed by that special creation he has used as God intended he should, and the history of man is conclusive proof of the truth of the inspired record.

The credulity of Darwinianism is appalling. Because they have discovered a law of evolution in animal structure from the lowest to the highest forms, and that the bodily structure of man conforms to that growth and evolution, they assume that therefore man just grew from an ordinary animal to a man. They leap the gulf between man and a mere animal at a jump. They discard God and his power. They recognize the law of evolution, but not the Lawgiver of evolution. Is not this appalling presumption and credulity?

But more, without finding a single connecting link in the genealogy between the animal race and the race of man or in the geological strata of the earth they ignore this most important fact, and the only one that could possibly justify their conclusions and jump at conclusions that would shock the sensibilities of their supposed ape ancestor. They must either find in the lineage of a monkey a real man, or in the lineage of a man a real monkey or find their remains in strata of the earth or their mouths are forever stopped; and their presumption is too apparent for argument.

Find us a monkey standing erect shedding his hair, dropping his tail, enlarging his brain-pan, humanizing his countenance, his eye beaming with intelligence, and his tongue speaking the language of reasoning logical thought, or find the half-humanized monkey in the petrified strata and then we will consider whether there was a necessity for a special creation, and whether Moses was mistaken. But this is asking the impossible; and only shows the unreasoning credulity of many scientists, who scoff at the supposed credulity of Christians, and believers in spiritual and re-

vealed truth and yet accept the most incredulous theories. They see the mote in their brother's eye, but do not stop and take the beam out of their own eye.

Darwin did a great work for humanity in showing the uniformity of God's laws, and the evolution of matter through all its diversity of forms, from the lower to the higher orders of animal life. He discovered the law of evolution one of the laws of Deity. If he forgot the Lawgiver in investigating the law, he did only what many physicists had done before him, and thereby jumped at false conclusions. If God has impressed such wonderful progressive laws upon his physical creations, what must be the infinite progressive wisdom of his spiritual laws?

In the Darwinian theory we see the wonderful power of electricity in the evolution of matter, in the formation of atoms, in the development of vegetable, mineral and animal forms. All these are the result of electrical combinations and forces, working under the law of evolution.

But Mr. Darwin has been misrepresented and misunderstood. In all his works he has nowhere claimed that man is or was the descendant of a monkey, or that the monkey or mammal was the original progenitor of man. His opponents and enemies have said this in order to create prejudice against his theory of evolution, affirming that that was the final and legitimate conclusion of his theory. But this is an unjust and radical statement, and is not in accordance with Mr. Darwin's position.

In his latest work on "The Origin of Species" in which he sums up the conclusions of his life work, he says, "I believe that animals are descended from at most only four or five progenitors, and plants from an equal or less number."

Can any one doubt from this statement that he considered man one of the four or five original progenitors? I do not.

He again says "with respect to the lapse of time not

having been sufficient since our planet was consolidated for the assumed organic change," and "that the geological record is imperfect all will admit," "I have felt these difficulties far too heavily during many years to doubt their weight." His life work was the study of the growth and evolution of vegetable and animal structure and forms, from which he concluded there were few species or original progenitors. This conclusion he came to from the facts he states thus, "The similar framework of bones in the hand of a man, wings of a bat, fins of the porpoise, and leg of the horse, the same number of vertebra forming the neck of the giraffe and the elephant explain themselves on the theory of descent with slow and slight modifications." Again he says "on the principle of successive variations we clearly see why the embryos of mammals, birds, reptiles and fishes should be so closely similar, and so unlike their adult forms."

Darwin was a true scientist, and a benefactor to the world, and a man not devoid of religious feeling and veneration. For he approved the following sentiment in the last pages of his book "On the Origin of Species." "A celebrated author and divine has written to me, that 'he has gradually learned to see that it is just as noble a conception of Deity to believe that he created a few original forms, capable of self-development into other and needful forms, as to believe that he required a fresh act of creation, to supply the void caused by the action of his laws.' " A man who approved that statement cannot be entirely irreligious. He may not be bound by any ecclesiastical authority, but in recognizing the creative wisdom of the architect of the universe, he is exercising the highest attributes of religious devotion.

All truth is God's truth, and it is the duty of all men to accept it, and none should fear the beneficence of its results, whether they can foresee them or not. The laws of God

and nature, physical and spiritual, are a perfect unity, and are in exact harmony with all truth, and every fact in the universe is in harmony with every other fact. And they who are seekers after truth, and add to the store of human knowledge are benefactors of mankind. As the spiritual is more enduring than the material, Christianity is founded on a deeper, more enduring basis than physical science, but both are founded on the laws and truth of God; and none should fear that one can, or ever will overturn the other.

CHAPTER XI.

EVOLUTION, THE VORTEX THEORY, AND LIMITATION OF TEMPERATURE.

EVOLUTION according to Herbert Spencer is "the transformation of the homogeneous through successive differentiations into the heterogeneous."

Evolution is therefore a mode of succession of phenomena—a law of sequence. It is not a force, but a plan in which force works, and is the total result of the action of the evolving force. Evolution implies force, and no one can recognize its steps without recognizing the operation of some force acting upon matter and producing motion. This force I contend is electricity operating upon matter under the laws of nature, according to the intelligent mode or plan of development adopted by Creative Deity.

The tendency of evolution is supposed to be atheistic,—a device to explain away God, but it is not. It attributes all existence and growth to natural law acting upon matter; but natural law presupposes a God of nature, the law-giver who promulgates all law, controls all forces, and evolves all created things.

As evolution is alleged to embrace man the mental and moral class of creation and recognizes only material force it is supposed to be materialistic in its tendency. But as all force in the material world is now known to be an invisible, intangible force seeming as spiritual in its properties as material, that assumption fails. And as it is now known that all visible matter has its foundation in invisible imponderable matter, the whole materialistic question fades like a dissolving rainbow, which is not more evanescent in its be-

ginning and ending than what is known as matter. Cosmogony and organism,—the life of the earth and the life of animal organism is where this doctrine of evolution has waged its principal contests.

Natural selection, inherent tendencies, environments, organic types and species, do not account for evolution; there must of necessity be an intelligent force, or law of sequence, back of all these. The law of evolution is progress, development, from lowest to highest forms of life. But to what end?

No more time is now wanted to show the connecting link between intelligent man and the dumb animal, if any ever existed. The Egyptian mummies of four thousand years, and the types of the stone age reaching back many thousand years prior, give testimony to the constancy of types, the fixity of brute instinct, and the growing, evolving intelligence of man. The simplest original types of animals still exist, with rudimentary organs. Why is this, if the law of evolution is universal and man is the product of animal development? A physical cause cannot produce a varying result, and physical forces act in cycles and not progressively.

Natural selection, the struggle for existence, and the survival of the fittest, is not sufficient to produce the results ascribed to it. Besides these are not a cause, but a set of conditions, which must have an intelligent cause back of them.

Archegensis cannot ignore a non-physical force; and evolution in the physical world must be rational, and lead to intelligent ends and purposes.

Science must lead to a rational beginning, and evolution in the organic world teaches unity of phenomena, and intelligent harmony—which means God. God is a scientific necessity. And no science, evolution or life can exist without resting upon God—without having a rational begin-

ing, and an intelligent, progressive development to a rational end and purpose. Science with its primitive nebula does not supply us with an ultimate cause. Science is not self-inaugurating; matter is not self-inaugurating; the world and evolution are not self-inaugurating. They all demand a power superior to themselves to originate and evolve them. But the law of evolution—progressive development in nature—is now generally accepted and is harmless to religion, and detracts nothing from the Deity who impressed it upon matter.

The whole physical aspect of the world has been wrought out as a single history of continuous evolution, growth and development, showing an intelligent design and an omnipotent designer. Not only is this true of our world but our solar system has more than one hundred and fifty planets, satellites and asteroids, revolving around electric centres in a system so perfect that no collision has ever occurred, and none seem possible to occur. And all these are materially identical with our earth, differing only in temperature and the conditions that attend it.

The whole stellar universe, or sun-systems are almost exact duplicates of our own, except many are of larger dimensions. The worlds are all alike and the suns are all of one pattern, their physical state being that of an incandescent, electric, gaseous atmosphere, enveloping a solid nucleus—thus resembling our sun.

The same chemical substances which form the earth and sun, also build stars and nebula; and their constituent elements can be bought in "every well-regulated drug store."

Universal electric attraction, commonly called gravitation, acts in the starry realms as it does here, creating the same movements among the stars and nebula; and all testify to the common, pulsating, invisible ether that permeates all space, and from which by electrical energy they were all formed, and all testify to an intelligent design.

These revelations inspire us with the belief that to possible knowledge there will in time be no limit. That the higher antecedents of matter is imponderable, invisible etheric matter and the source of those energies resident in and around it, is electricity; thus I would unify and simplify all creation; and make the universe as transparent as Infinite wisdom,—for God and nature are the perfection of simplicity.

This may be hypothesis, but the laws of Kepler were hypotheses till tested and sustained, and tentative hypotheses are the usual methods of discovery, and many never admit of strict demonstration.

Whatever interpretation we put upon evolution in types and prototypes and in embryology they demonstrate method and consequently intelligence. The beetle shows little resemblance to the earth worm which is the infant beetle; the infant or embryo frog is the fish-like tadpole; the chick in the egg assumes the aspect of a fish, a snake, a bird of low degree, and finally the similitude of its parent.

Even man possesses at an early period in embryo, the bronchial aperture of the fish, and assumes in succession the aspect of a seal, a quadruped, a monkey, and a human being. These embryonic affinities reach out to all animals of the same fundamental type; yet the wide disparity between the mental faculties of man, and the brutes next below him stands as a yawning gulf which no developmental or evolutionary process can ever bridge, showing man's type and vigor is in his immortal mind—and that he is a special mental or spiritual creation on a higher plane, having no affinity with the unreasoning dumb brute, except in his physical elements which are a part of mother earth, from which all are formed.

Yet with all these similarities of physical structure in the animal creation, not a single variation has extended so far as to produce and continue a new species. This is the

testimony of Egyptian mummies, and of the types of the age of stone.

Mules which are a cross between two species are incapable of propagating, and thus all hybrid forms disappear. The four fundamental types of animal structure, to wit, the vertebræ, articulata, mollusks and radiates which now exist, run back through the whole history of life upon the planet. Reptile, bird, mammal and man existed potential in the primitive fish. Modification of certain bony elements have wrought out each type, the fin of the fish became the foreleg of the saurian, the wing of the pterodactyl, and then of the bird, the foreleg of the fleet deer, the climbing squirrel, the digging mole, the paddling whale, the arm of the monkey, and then the arm of man to execute the behest of his intellect. But brutes have made no progress in intelligence or instinct, while man has had progressive intelligence.

Environment, struggle for existence, survival of the fittest are all set forth as causes of the origin of specie, by Darwin, Huxley and others. But how did the struggle for existence make some stronger than others? Struggle, effort, exercise makes stronger—gives strength if nutrition restores the waste forces, otherwise it weakens and destroys. But how and why? I answer that it is because electricity produces muscular action, and the more action the more electricity comes to aid flesh, muscle, nerve and sinew, and draw to it strength from the unseen elements of matter through nutrition and the atmosphere. This is why practice makes perfect. Nature through electric energy comes to the help of those who help themselves, and by replacing the waste matter with new substance increases the physical vigor, so that those that struggle grow stronger and live; while those who do not become feeble are overcome, and die. So that the law of electrical energy is the source of all physical strength, the cause of all progress or develop-

ment, as well as the cause of all motion. Electrical energy has been the cause of evolution in all forms of vegetable and animal life.

Physicists declare their science does not mount up to God. It does not take cognizance of invisible matter and invisible forces. It finds "the beginning" in a world of primitive incandescent vapor or nebula. But this is not sufficient—it does not explain the ultimate or first cause. Reason demands the cause of the beginning. What was the cause of the nebula? What force has wrought such an intelligent system of material things out of such a chaotic and unpromising beginning?

Reason affirms that back of the initial point, must have been an ultimate cause, for matter and force are not self-existent, but created.

Helpless science here abandons the field and invites reason with her clear adamantine utterances to step in and answer the inquiry. And when she draws aside the vail which separates between spirit and matter, science has no "bill of exceptions," to file in the court of reason or philosophy.

All history, and all things run back to God as their originator and real cause. Viewed only as a machine, how stupendous is the mechanism of the universe, and how wonderful the wisdom and power of its Omnipotent author. It is his volition through electric force that draws the apple to the ground, and balances the planets in their orbits. So perfectly has the Great Architect constructed this machine of the universe that there is a perfect harmony in all its parts showing infinite wisdom and power.

Dr. McCosh declares "there is nothing irreligious in the idea of evolution or development properly understood." Buchanan said that if evolution was established, "that theism would not thereby be destroyed or even diminished."

Even Mr. Darwin sincerely believed that his theory

ought not "to shock the religious feelings of any one," and he speaks of life "having been originally breathed by the creator into a few forms." Mr. Wallace traces all natural phenomena to will and says "the whole universe is not merely dependent on, but actually is the will of higher intelligence, or of one supreme intelligence."

Professor Parson says, "God never leaves his machine, for if he did it would instantly perish; because it is always his present actuality which gives force and efficacy to the laws by which he works."

Professor Lyman exclaims "How dead the science which puts force as its first cause." Dr. O. W. Holmes says, "whatever part may be assigned to physical forces in the production of life, all being is not the less one perpetual miracle, in which the creator acting through what we call secondary causes is himself the moving principle of the universe, he first framed and never ceases to sustain it." Professor Mivart assures us the prevalence of the theory of evolution "need alarm no one for it is without doubt perfectly consistent with the strictest and most orthodox Christian theology."

It was the opinion of St. Augustine that God created by conferring on the material world the power to evolve organization. Sir Thomas Aquinas quotes with approval the saying of St. Augustine, that in the first institution of nature we do not look for miracles, but for the laws of nature, and that the kinds of animals and plants were only created derivatively.

Professor Huxley says the fundamental proposition of evolution is, "that the whole world, living and not living, is the result of the mutual interaction according to definite laws, of the forces possessed by the molecules of which the primitive nebulosity of the universe was composed." This statement would defeat the whole doctrine of evolution, for the molecules do not possess the forces, but the forces

magnetic and electric, possess the molecules; and "the primitive nebulosity" had no force of itself, but was and is composed of invisible, unchanging atoms. This is as unreasonable as his statement that "light and heat is a mode of motion," which is putting the cart before the horse, the created above the creator. Electric energy produces light, heat, and all motion of atoms. Atoms or molecules do not produce motion "and primitive nebulosity" they are produced by electric magnetic forces which produces all motion growth, evolution and organism.

Professor Dawson says evolution is a hypothesis "which solves the question of human origin by assuming that human nature exists potentially in mere inorganic matter, and that a chain of spontaneous derivation connects incandescent molecules or star dust with the world and with man himself." It is an unproved hypothesis. Guyot says, "Nothing could be farther from the fact than the statement that the doctrine of evolution is a settled scientific doctrine." Lord Kelvin is reported to have said "That man could have been evolved from an inferior animal is the wildest dream of materialism, a pure assumption which offends alike by its folly and its arrogance." Professor Gray declares, "Nature is either the outcome of mind, or mind the outcome of nature. The former has been more commonly accepted, and modern science has failed to prove the contrary." Professor Chase says, "It does not dispense with intelligence. It only carries to a point farther back the directive power of mind." Patterson says, "It can never establish atheism. Creation by law is as divine as creation by command." Huxley affirms, "It does not affect the doctrine of final causes." Sir John Lubbock says, "Since the opening of the human period we have no evidence whatever in the world of physical life of any operation of the evolution principle." So if it ever existed it must have ceased many thousand years ago.

This fact with the failure to discover the "missing link," the fixity of animal instinct, the unchanging property of atoms which are incapable of evolution, the impossibility to generate life independent from antecedent life, and the increasing intelligence, genius, gift of language, and moral and religious sense of man, make evolution an unproven theory.

Lord Kelvin is the author of the vortex theory which has been so largely accepted by modern scientists as the most acceptable explanation of gravitation. The only previous plausible attempt at its explanation was that of the Swiss philosopher, Le Sage, who claimed that what he called "ultra mundane corpuscles" are everywhere flying through space, and have the effect of pushing all bodies toward one another.

Of late the thought of the vortex atom has suggested that gravitation may be in fact what it seems—a pull due to a sort of suction of the whirling atoms. When asked whether this theory appealed to him as it does to many thinkers of our time, or whether he preferred the rival theory of Le Sage, Lord Kelvin said, "No, no, no, I accept neither theory; I accept no theory of gravitation." This is the language of the author of the vortex theory, which takes rank with the foremost scientific theories of any age. It deals with that ever-fascinating question of the ultimate nature of matter. It was based upon mathematical calculations of that other great physicist Von Helmholtz, which took form in Lord Kelvin's (then Sir Wm. Thompson) mind while he was watching the activities of some curious little whirling rings of smoke in the air, similar to those with which every tobacco smoker is familiar.

Helmholtz had shown that such a vortex whirl once started in a frictionless medium, must theoretically go on forever.

The vortex whirls of smoke in the air of course do not go

on forever, because their medium is not frictionless; but Lord Kelvin observed that while they last they exhibit a similar stability, and though composed of mere wreaths of smoke take upon themselves the properties of solid bodies, in virtue of the motion just as a moving bicycle assumes the property of upright rigidity. And the thought came to him that if a vortex whirl were started in the ether, which physicists assume as penetrating space everywhere, such an ether vortex would have the properties of a particle of what we term matter. This thought expanded became the vortex theory of matter. It has also since been used by some to account for the theory of gravitation.

"It is well within bounds to say," asserts a well-known writer, "that this is the most fascinating and beautiful conception of the ultimate nature of matter that has ever been propounded. The thinking world so regarded it, and took it up with acclaim, and made it the foundation of all manner of beautiful speculations. It had a simplicity that appealed to every philosophical mind, for it enabled the thinker to reduce the entire universe to ether in motion.

"One had but to assume a few different kinds of vortices, the simplest of them circular in form, but others perhaps convoluted to account for the different chemical and physical properties of the elementary bodies; and in the mind's eye, one had in the ether that ultimate, unique matter, the foundation substance of the universe.

"If then," continues this same writer, "a man may take pride in his achievements it would seem that the author of this theory might well be excused if he held this child of his brain in a little more tender regard than any other of his mental offsprings, and the astonishment of his interviewer may well be imagined when the vortex theory being mentioned to hear him exclaim with all the emphasis that characterizes his delivery :

"'The vortex theory is only a dream, it is only a dream.'

“‘But surely we are not to understand that you repudiate the vortex theory?’

“‘Not that, not that,’ he said, ‘I only say that it is unproven, hence that it can prove nothing; it is only a dream.’”

Was ever there a finer test of the true greatness of any man? A lesser man than Lord Kelvin having propounded a theory that found favor with the world, would have dwelt and harped upon that theory all his life. But he did not. Why? Because it could not be proven.

The scientific world, however, is to be congratulated that once upon a time Sir Wm. Thompson permitted himself to dream the dream of the vortex atom. When genius dreams, they say there is always a chance that it may “dream true,” and the vortex theory will not be discarded until some better theory shall come to take its place.

My theory of the motion of atoms, call it the vortex theory, as the best known and most plausible is that back of this motion, and the controlling force of all motions of atoms and worlds, is electricity.

Why do I say this? Because I believe the electric currents permeating all substance and space are the forces that cause the motion of atoms, worlds and suns. I reason from what man has made electricity accomplish to what God has made electricity accomplish in building and maintaining the universe.

Man has made it produce light, heat and force. He has taken this mysterious, potential substance that he cannot understand and created miniature suns and worlds, and given seeming life and vitality to insensate matter. He has made it speak intelligent thought around the world as instantaneous as the lightning’s flash, and gather words and utter them like the human voice. He has made heat and light by friction as the earth makes it in its dizzy whirl through the resisting ether of space.

Another question that may effect the electric theory and

the vortex theory that is agitating scientists, is the absorbing question of the limitation of temperature. The condition we term heat is held by the physicists to be merely "a mode of motion," a vibration or quiver among the particles of matter. The precise nature of this vibration cannot be perfectly understood until the precise nature of the atoms of matter themselves are made clear. Professor Dolbear has pointed out that if the vortex theory be true then there must be peculiar limitations to the atom's possibility of vibration. A ring-shaped atom for example could only vibrate to the extent of becoming completely collapsed—just as a tuning fork can only vibrate to the extent of bringing its two prongs in contact.

Corresponding limitations would be placed on vortex atoms of any conceivable shape. Hence, says Professor Dolbear, if the vortex theory be true there must be an upper limit of temperature. When the vortex atom has reached its limit of vibration heat cannot become more excessive. Now the physicists have long held that there is a lower limit of temperature,—a so-called absolute zero reached when the atoms altogether cease to vibrate. This brings into consideration no less a problem than the age of the solar system, which is based on the loss of heat which estimate is derived from direct observation of the sun in its present relatively cool state.

There are also experiments now being made with low temperatures which are instructive and show that electric motion and temperature changes the appearance and character of matter.

Thus Professor Dewar and others have liquified the gases, and even reduced many of them to a solid condition by producing an almost unimaginable degree of cold. It having been shown that the same body changes from gaseous to liquid, and from liquid to solid states, simply in virtue of changed temperature, what will happen when a body is

reduced to a condition in which the vibration of its atoms altogether cease. The particles of a gas are so active that they fly asunder, reduce their activity,—that is to say, decrease their temperature and they move freely over one another and assume the liquid condition, make them still more quiescent and a solid results. Will there then be another change of state when they are made absolutely quiescent at the absolute zero point?

I am not able to answer these questions, but my conjecture is that beyond the forty miles of atmosphere surrounding the earth the diffused ether of space has such a low temperature,—is so extremely cold its atoms are in a state of quiescence and create no friction or obstruction to the sun's rays, but act like crystal or clear ice in concentrating its beams upon the earth and planets. Thus the heat and light of the sun are not wasted or diffused and lost in useless space, and the marvelous economy of nature is maintained. The light, heat and electricity of the sun's beams are chiefly produced by the friction and pressure of the atmosphere near the earth's surface where its beneficence is most needed, and gives vitality and growth to vegetable and animal life. It is well known that on the tops of high mountains where the atmospheric pressure is not so great the rays of the sun are neither so warm nor powerful as in the valleys where the atmospheric pressure is greatest. But the voltage or supply of electricity is greater in the upper rarefied atmosphere of the mountains. All these facts show that all matter is one matter, and its varied forms are produced by the motion of its atoms which effect its temperature and electric conditions and currents.

The atmospheric pressure near the earth's surface creates the greatest resistance and friction to the sun's rays, and thereby creates the heat and electric activity for the direct benefit of all animal and vegetable life.

But the voltage or electric power is greater at the top of

mountains and higher altitudes. This results, as I believe, from the fact that the swift revolutions of the earth like the swift turning cylinder or armature of the dynamo, tend to throw it off into the clouds and higher atmospheric strata, which moves in a different direction from the lower strata.

Recently some very interesting repetitions of Franklin's classic kite experiments have been made with the improved Hargrave kite reaching altitudes two miles high. The result shown is that the electric condition of the atmosphere during a snowstorm is the same as during a thunder shower, the air being charged in an equal degree. At the higher altitudes sparks could be obtained from the kite wire even on a cloudless day. That the potentiality increased with height also received verification. Some of the experiments were made from the top of the Washington monument, and during severe thunder storms potentials as high as three and four thousand volts were obtained. Observations in fact, have been recorded at other places; at the top of the Eiffel tower for instance, of voltage as high as ten thousand.

This tends to prove my theory that the earth is an electric machine and by its rapid revolution on its axis, and the friction thereby created by the atmosphere, and the positive and negative poles, manufactures electricity, as man's invention, the electric machine or dynamo manufactures it. In other words the earth and the suns are God's electric machines or dynamos, just as man's dynamo is an electric world in epitome, a sun in miniature. Man's electric machine is but the lesser earth, and God's earth is but the greater electric machine. Thus man has worked out the thought of Deity.

CHAPTER XII.

THE MOSAIC ACCOUNT OF CREATION NOT IN CONFLICT WITH MODERN SCIENCE.

IN my judgment modern science does not conflict with the teachings of the Bible, or the Mosaic account of creation, when properly understood. The Mosaic cosmogony is so far superior in sublime conception of that stupendous miracle the creation of the world, that all ancient and modern attempts to excel it are dwarfed into insignificance. The mistakes of Moses have been far less than those of the erudite modern scientists who have undertaken to ridicule his sublime story of the world's beginning. With all the facts and inspiration of modern knowledge they can construct no theory of the creation half so reasonable or beautiful.

They admit they know nothing, while Moses claims he knew something, and received his knowledge from the highest source, the first great cause, and not from hearsay. Moses is a competent witness by all the rules of evidence, while they are not.

Yet with the dogmatic assumption of the Agnostic, which they claim belongs alone to religious superstition, "like the ambitious youth who fired the Ephesian temple," they would destroy this temple of human hopes and immortal aspirations, offering nothing in its place, but leaving only darkness and desolation where it stood. They have nothing to offer, they offer nothing for that which they would destroy. They are the grim executioners of faith, the iconoclasts of hope and heaven, the blind pilots of a rudderless barque directing shipwrecked mariners on a shoreless sea without compass or chart.

The prince of skeptics must admit there is no more perfect system of morality than the teachings of the New Testament. There is no higher rule of action than the golden rule, no nobler ethics than to love thy God, with all thy heart, and love thy neighbor as thyself, and love thine enemy, doing good to those that hate thee. The sublime teachings of the stainless Christ, the heavenly beatitudes of the sermon on the Mount, the inspiring voice of prophet, saint, and seer in the oracles of divine truth with their healing consolations of faith and hope have no equal in all the sweep of earth's voiceful centuries.

So is it with the Mosaic cosmogony. It towers above all others, like Olympus above an ant hill. It is as majestic as the Alps, sublime as the bending firmament, grand as the exultant shout of the morning stars.

The Greeks, the wisest nation of the past, said the earth was flat and rested on the back of Atlas or a huge turtle. The Hindus, the next wisest, said it rested on the back of an elephant. But they did not tell us what the elephant or Atlas rested on. They in all their learned philosophy had no conception of a beginning, no conception of a great Creator and a boundless creation.

The supreme Jupiter and all the gods dwelt just above the clouds, a few miles from earth, and held their wrangling councils on Olympus, and mixed in the base intrigues of unscrupulous and ambitious mortals.

According to the Japanese, "In the beginning the world had no form, but was like an egg. The clear portion—the white—became heaven; and the heavy portion—the yolk—became earth." Such are the words of the holy book Shinto, or Way of the Gods. According to this book, two gods descended from the skies. Of them a son was born whose body was so bright that he ascended to heaven and became the sun. Then a daughter was born and she became the moon. Other children came after them who lacked

the celestial tendency and they remained on earth and became the progenitors of men.

In the early genesis of earth, first are the dynasties of the gods, then the dynasties of men. From the Mosaic and all the early fables of the world's genesis, their varied narratives are full of incredible marvels and inscrutable mysteries. Thus the myths melt into tradition, the tradition into the poem, the poem into history. Among all the nations of the past none have formed or preserved an intelligent and reasonable conception of the world's genesis except the Jews through their great lawgiver Moses.

Moses said, "In the beginning." You cannot fathom this limitless date, you cannot scale this infinite height, you cannot delve to this bottomless depth. It reaches beyond the first grey speck in the nebulous ether of silence and darkness, before the voice of God broke the silence of the dead eternities.

It covers all the dark vista of receding time. It spans a trillion of years as easy as a thousand. It scans the infinitude of the past, as nimbly as a second hand on a watch designates the stroke of a second. It turns back the tide of years to the stroke of the first moment in the life of a universe.

"In the beginning God created the heavens and the earth." As there is a creation there must be a creator, and the Omnipotent God or Good brought forth the heavens and the earth—all the visible creation.

"And the earth was without form and void, and darkness was upon the face of the deep." Modern science with unanimous voice accept the truth of this statement, but calls it "a nebulous state." or an etheric diffusion of matter through all space.

But how did Moses know this? It took the wise men of science four thousand years after him to learn and accept this fact, and they are still discussing what is nebula.

Norman Locker says, "Nebula is due to clouds of meteorolites, the collisions of which produce the heat and light which causes the nebulous glow."

"And the spirit of God moved upon the face of the waters." The creative will, the divine mind or spirit was aroused to creative energy.

"And God said, 'Let there be light.' And there was light." At the voice of God the unborn world was luminous, and darkness fled. His word, quick as the lightning's flash, had turned earth's shadows into light.

What was that light? The sun and solar beams had not yet been created. I answer, that this light was electricity.

The Omnipotent Spirit by the word of his power threw the electric currents in radiated light and heat and force into and around all matter, and began gathering the atoms of nebulous ether diffused through infinite space into planets and worlds.

In response to the command of God the lightnings flashed, the electric currents gleamed athwart the dismal void, and over the rayless abyss of night and darkness; and chaos reigned no more.

For the chaos of the ages was when beauty had no name,
And the darkness of creation knew no voice to praise or blame;
Till the eye of God looked on it, and its shadows turned to
light—

And behold the good and beautiful stood only in his sight.

Nothing in the physical universe is instantaneous except electricity. In this it is like the flashes of thought and the perceptions and movements of spirit. How did Moses know this?

At the behest of Deity the electric currents and flashes lit up instantly the dark chaotic universe, and God's work of creation began. It was a long and steady process of growth and evolution.

Spirit commanded and electricity obeyed instantly with alacrity and power, and matter is the visible product of these two great ever-working eternal forces.

On the first day, three days before the sun was created, God's "spirit moved upon the face of the waters," and his word spoke light into existence. As there was no sun in existence, can any one doubt but that it was the light of electricity that flashed out over a newborn world? Was there and is there, any other light in the universe but electricity in some of its forms?

I hold there is not. The light from burning forests, from flaming volcanoes, from stubble, wood, oil, all combustible substances is the light of electricity and is the heat of electricity. And all force and power coming therefrom is the force of electricity in some of its forms. The heat and power of steam, its pressure and expansion is the result of some chemical action produced by electricity. It is not known how fire burns, how heat is produced, how light is made, how force is generated in nature—that is the chemical process is not fully understood. But enough is known to show that electricity is the essence and moving power in the mysteries of light, heat, force and life.

I therefore hold that there is no known light, heat and force in the visible universe but electricity in some of its forms. That there is no known life and vitality in matter but electricity in some of its mysterious elements.

Back of electricity, back of matter, back of all things is spirit—the masterful soul of God and the masterful soul of man, atoms of the one divine eternal spirit.

Thus electricity came forth at the divine command, permeating and controlling matter, impressing natural law upon it, enlightening its darkness, solidifying its nebula and bringing light, order and beauty out of chaos.

This electric life-giving "word," and "moving spirit" under the direction of creative intelligence took charge of

this embryonic creation, put light and life and force in motion, and promulgated the laws of revolving atoms and worlds in the newborn universe.

Then the vast nebula of infinite darkness and space felt the vitalizing thrill of electric currents, and all their wonderful power, and the law of accretion, growth and progression became stamped upon revolving worlds. And the electric magnetic repulsion and attraction, positive and negative, became the supposed law of gravitation and cohesion, and solidified void nebula or nothingness, until the blazing heated earth cooled, the volcanic fires crumbled into its molten centre, the crust hardened on its outer rim, and the firmament was established, "the waters gathered together and the dry land appeared."

This may have taken millions of years. Moses does not say how long, but the vitalizing moving forces that shaped and generated a world I affirm was electricity. This wonderful substance continued its productive process, until Moses tells us, "the earth brought forth grass and herbs, yielding seed after his kind, and the tree yielding fruit." And Moses says, "The evening and the morning were the third day." The days referred to are properly understood as an indefinite period of time and should be so translated.

If Moses was not inspired his knowledge seems marvelous, for modern science with all its love of controversy approves the order of the successive periods of creation he has set forth. How did Moses know light came first, and was instantaneous, and brought with it heat and force? How did he know the earth was without form and void, he had never heard of "the nebulous theory." How did he know God first created light, and then in the fourth period created the great repositories and generators of light, the dynamic suns of the solar and stellar systems to replenish the earth and planets with their electric life-giving rays? What did he know of the natural order of creation, first

light, then land and the grass and trees, then the suns, then animal life, first the fish and fowls, then the cattle and beasts, and then man, the crowning glory of creation.

There was vegetable life but no animal life until the great life-giving central electric orb brought greater light and heat and vitalizing power. Then it became like the dazzling eye of Omnipotence that looked and "behold all things were good." Then earth found her trackless, unvarying orbit, and the seasons came and went, and the planets wheeled in mazy circles round the orb of day,—the light and centre of this universe of days,—and man came forth in the spiritual image of his maker, and "the morning stars sang together and all the suns of God shouted for joy." Then man felt the inward glow of a spiritual life from God himself, for he was an atom of the eternal spirit. Moses says God made man from "the dust of the earth." Science approves the fact, and acknowledges the verity of the eternal decree, "dust thou art and unto dust shalt thou return."

Ah! but inquisitive, skeptical science stops there, and accepts but half the eternal decree, discarding the greater sublime verity, "thy soul shall return to the God who gave it."

Why? because it cannot follow intangible, mysterious spirit as it can the grosser atoms of matter, and yet the refined essence of matter is intangible and invisible.

Electricity is invisible and mysterious like spirit or mind, and science cannot understand it. Why not refuse to recognize it also? Why not ignore light, heat, life, thought, digestion and assimilation of food, because they cannot be understood. Why not say there is no such thing as love, truth, virtue, friendship, honor, because they are invisible, abstract entities and constitute elements or qualities of mind or soul?

If science discards spirit or soul, it must deny all the

elements and qualities that compose it, or it must admit everything. Why not deny there is a universe because we cannot understand its mysteries? Why not deny there is life, because we cannot comprehend its essence and invisible mystery?

But science does not ignore what it cannot understand in the material world and mental world, why should it ignore the ever-present manifestations and attributes of spirit? The conscious, reasoning, intelligent entity of man is distinct and separate from the atoms of his body. What is man? Is he the food he eats, the air he breathes,—the atoms he thereby adds to his body?

Moses taught he had a spirit, a soul, which makes his inner thought life and conscious existence. Moses says "God breathed into man the breath of life, and man became a living soul." Moses knew more than all the scientists.

Science when it ignores spirit, wipes out the decalogue, destroys all ethics, and defies all law. All human government and law recognizes that man is what his thoughts are. That they make his inner life or existence—that they constitute the man, his real character and life. That the intent is the moral quality of every action, and justifies or convicts him.

Murder is not the act of the hand, but the deliberate intent of the soul, the malice aforethought of the mind. All law is founded on the recognition of the spiritual intent and perception. And all innocence or crime is a spiritual or mental condition, of which matter takes no cognizance. Human and divine ethics are founded on spiritual perception and motives. The law which says, "Thou shalt love the Lord with all thy heart, and love thy neighbor as thyself," "Thou shalt not kill or steal, or bear false witness," all apply to the spiritual intent and nature, and recognize the soul as the basic fact in man's nature. Moses says man became "a living soul," not a mere living animal. That

soul is "the breath of life" from the lips of Deity,—a vital spiritual spark from the Eternal Spirit.

How did the writers of the Bible know so much about the the spirit? They affirm, "God is a spirit," that our "bodies are the temples of his spirit," that we must "worship him in spirit," that we are the offsprings of God. They were wiser than our modern scientists, and certainly had either natural or supernatural inspiration, and were nearer the truth as science is steadily unfolding and improving it. How did Job know that "all flesh is grass," for he stated a scientific fact but recently discovered, that all matter is one matter, and the movement of the atoms makes the difference in the seeming diversity. Why should he say "who can bind the sweet influences of the Pleiades?" When astronomy has but recently fixed them near the centre of the universe, where they draw all the revolving constellations around them?

The ocean is called the "image of eternity," the "throne of the invisible." It is described as "boundless, endless and sublime." It is terrible in wrath; it is awful in beauty; it has all the moods of sensitive genius; and all the majesty of sovereign power. It fascinates, and it repels; it delights and it terrifies; it scatters smiles; and it darkens the heavens with frowning wrath. The Greek poets sang of the barren sea, and this economic age speaks of the "waste of waters"; but the Bible speaks of the "abundance of the sea." And the Bible is right, though it had no knowledge of modern science and was not intended to teach science. The sea is not barren, neither is the world of waters a waste. It is the ocean and the chemical electrical action it aids and produces that prevents the earth from becoming a desert. The forests on the mountains, the grass on the plains, and the cattle upon a thousand hills all derive their life and daily sustenance from the sea. Three-fourths of the entire surface of the globe is

covered with water to be an exhaustless treasure of life and health and riches to everything that lives and grows on the remaining fourth of dry land.

Astronomy shows us the moon to tell us what kind of a world we would have without an ocean and the electric currents of the atmosphere. Viewing the pale empress of the "starry night," we see jagged mountains, and volcanic peaks, dark empty hollows, long reaches of narrow defiles and waterless valleys. We peer into extinct craters of exhausted volcanic rage, covered with the ashes of desolation.

Yet the mountains with their electric internal fires, their barren rocks, and eternal snows because of the ocean and electric currents of the air are the storehouse of riches and fertility for all the valleys and the plains.

Level the Andes with the basin of the Amazon, and South America would be a desert. Erase the Alps from the map of Europe and the banks of the Rhone and the Po would be smitten with worse desolation than plague or war. Sweep from this continent the Rocky and the Alleghany mountains, and the fertile valley of the Mississippi would become almost a Sahara.

If the high lands of Ethiopia should sink to the level of the plain it would dry up the fountains of the Nile, and inflict upon Egypt a worse calamity than the ten plagues.

The mountains supply sources for the rivers; they condense clouds from the humid air, and draw the electric currents that shower refreshing rain on the hills and valleys below.

They produce varying electric currents in the atmosphere, sweep away the malaria of the marsh, and the infection of the crowded cities, and bring the health-giving ozone from the skies.

How did these writers who lived in times of comparative ignorance, know that "The invisible is greater than the visible, the unseen than the seen"? This is the best defini-

tion that can be given of spirit and electricity, yet electricity was unknown, and spirit is intangible.

How clear is their statement that the physical body "shall be raised a spiritual body," that "we are one in spirit as God is one," that "God is in you all," that "not a sparrow shall fall to the ground but our heavenly Father knoweth it." How did they know that the fall of an insignificant sparrow would set an electric wave in motion that would reach the utmost bounds of creation, and touch the feet of Deity?

Is it not more than a poetic fancy, and does it not accord with the exultant shout, and swelling diapason of prophet and psalmist, that the electric atmospheric cushion that surrounds the earth is in a sense the invisible arms of Omnipotence bearing the earth and its inhabitants to their inscrutable destiny?

CHAPTER XIII.

THE SCIENTIFIC EXPLANATION OF THE DELUGE.

"STRANGE and startling coincidences are found in Genesis and geology with reference to the Cenozoic age vindicating the veracity of the revealed record. In this age a new distribution of the mass of the earth took place causing the emergence of land in the Southern Ocean, by the uplifting of the bed of the South Pacific Ocean." So says W. R. Pierce in "Genesis and Modern Science," and he continues :

"Abundant evidence of such changes at this period is found in Australia, and South America. Dana, one of the greatest of modern geologists says : 'The tertiary movements along the Andes affected half—at least—of South America, this region undergoing an elevation of many thousands of feet.' Accompanying this emergence of the large portions of Australia and South America was doubtless the emergence also of some or all of the Australian chain of islands, and of the Antarctic lands, thus overcoming still further the superior gravity of the Northern Hemisphere and bringing the axis of the earth more nearly toward the perpendicular direction.

"It was in this manner by the action of gravitation that the Arctic region once the torrid zone, now became the frigid zone, and from this new region now of perpetual ice and snow, descended those glaciers or masses of ice which have left their debris and marked with their groovings and scratchings the north temperate zone around the earth. Darwin says 'what then has exterminated so many species, and whole genera whose fossil remains are found? The mind is at first irresistibly hurried into the belief of some

great catastrophe, for thus to destroy animals so widely scattered we must shake the entire framework of the globe.' If man was living upon the earth as early as the triassic period it is a pertinent question to ask, 'How did he escape the complete extermination of life upon the earth at the close of the cretaceous period?' Mr. Pierce's answer is a startling one, calling for no new creation, and therefore the most probable. The cause of this complete extermination of life over all the world was the Noachian Deluge, and the earth was repopulated by those animals and human beings saved with Noah in the ark. Observe the remarkable coincidence of the facts stated in the scripture narrative and those of the geological record.

"It was at this time that Australia, a large portion of South America, and the entire chain of Australian islands were lifted out of the sea. Lyell says sudden elevations of large continents from beneath the waters of the sea have again and again produced waves which have swept over vast regions of the earth."

As the lands emerged from the South Pacific Ocean they caused great waves to spread out in every direction. These waves rushing toward the east and northeast, would overwhelm the American continent, and toward the west, north and northwest would sweep over Africa, Asia and Europe. The continuance of this rising would cause wave after wave to follow in the course of destruction. Notice how particularly, first of all we are told as the cause of the flood "all the fountains of the great deep were broken up," thus showing the deluge to have been mainly an invasion of the land by the sea, accompanied with continued rain. What more simple yet accurate language could have been employed to describe this event? The waters rose higher and higher until every hill that was under the whole heavens was covered. This shows unmistakably that the deluge was not local but universal.

Mr. Pierce says the deluge could not have been caused wholly by a rainfall. The atmosphere could not contain a sufficient quantity of water in the form of vapor to cover when precipitated as rain the entire surface of the globe to a depth exceeding the height of the mountains of the earth. The average quantity of water held in the air if precipitated at once would cover Europe, Asia, Africa, North and South America to the depth of only three feet.

We know that huge waves are raised in the sea by the oscillations of the earth's crust by earthquakes, and that these vast waves traverse the ocean from shore to shore. The great earthquake at Lisbon sent a monstrous wave across the Atlantic not less than twenty feet in height. An earthquake in Peru in 1868 at first caused the sea to recede, but soon returned with tremendous force overwhelming towns.

The incoming wave was fifty feet high, and the sea thus flowed in repeatedly. As it swept over the Pacific its width varied from 200 to 1,000 miles, and in mid-Pacific was 8,000 miles wide. It swept on at the rate of 400 miles an hour, and as it struck the shores of Southern California was sixty feet high. It inundated the Sandwich Island, the Marquesas, and Tuomotu, sweeping over the Navigator's Island, and rushed over the coast of New Zealand and Australia. This vast commotion was produced by a slight vertical movement of a small portion of the earth's crust, during a few minutes. This idea of successive waves invading the land corresponds well with the reiterated description of how the waters prevailed more and more. It also accounts best of all theories for the rapid subsidence of the waters. We are told that the waters prevailed upon the earth 150 days, and then abated, and 225 days later "was the earth dried."

If so much water as to have covered the hills and mountains had been added to the volume of the sea, and so have

covered the whole globe to this additional degree, it is simply impossible that the volume of water so added could have been wholly disposed of in so short a time. It could not have evaporated away; neither could it have been absorbed by the earth. But if the flood was caused by the vast waves of the sea overwhelming the land the waters as soon as the disturbing cause ceased would flow back to their former level, or in the marvellously accurate words of Scripture "the waters returned from off the earth continually."

Then again argues Mr. Pierce, if these tidal waves swept in from the direction of Australia they would have borne away the ark in a northwesterly direction, assuming the former dwelling-place of Noah was near the Euphrates, or in that general division of Asia, and the ark would have drifted up into Asia Minor, under the impulse of the currents setting in from the southeast toward the mountains of Ararat, as we are told it actually did.

Thus does modern science as best understood confirm the history and truths of the Bible. The recent discoveries in Asia Minor, in the ruins of Babylon and Nineveh, in the ruined cities of Egypt, and the tombs of pyramids and temples, and wherever the archeologist has explored, have all tended to confirm the Bible as true in history and fact.

Dr. Amos W. Patton the eminent Biblical scholar says, "This is preëminently the day of the archeologist. The tape line and the spade are commentators par excellence. There is an ancient tradition that the sitting statue of Memnon at Thebes emits musical sound when struck by the rays of the rising sun. The sun of this century has touched every ancient statue, temple and rubbish heap, and they are singing an anthem of praise to God, and to the integrity of his word. Within the last twenty-five years the Christian world has been thrilled with a brilliant succession of docu-

mentary finds in which Christian literature has been brought to light. In this year discoveries on the Nile are astonishing the world. The finding of the 'Logia' or sayings of Jesus is fresh in our minds, while from the same great collection of papyrus rolls dug up at Benesha, a part of the Gospel of Matthew has come to light.

"In these last days the very stones are crying out, and the buried ages are coming forth to give eloquent and unmistakable testimony to the genuineness and authenticity of the Scripture records."

Recently tablets or remarkable bricks narrating Noah's flood have been unearthed in the ruins of Sippara, an ancient Babylonian city. They date back 2140 B. C., and were made in Isaac's time, and their story of the flood is similar to the Biblical account, yet gives a fuller and more detailed version than the modern world has ever had.

CHAPTER XIV.

THE SUN IS INHABITABLE AND IS THE SPIRITUAL CENTRE AND PROMISED HEAVEN OF THE SOLAR SYSTEM.

ELECTRICITY commands the dynamic energies of space, and magnetism the creating, fashioning power in planetary bodies. What marvelous world building they accomplish. The sun needs no fuel to feed his fires save what come from these forces.

The sun and earth are two grand electric batteries and magnets that command these forces, and furnish the electric strength by which light, heat and force,—the nerve cords of the solar system convey throughout its vast system all creative and material energy. The sun is a great giver because he is strengthened by a vast globe of electric magnetic forces extending around him to the limits of his electrical empire of three thousand million of miles. According to the eternal law of action and reaction which are equal, he can give only as he receives. He can only build his electric sunbeams into the planets, as he is built upon by the electric energy that comes to him from outer space.

The sun revolves at the rate of four thousand miles an hour; his diameter is over one hundred times greater than the earth. While we can journey from the equator to the poles six thousand miles, the inhabitants of the sun would require a journey of over six hundred thousand miles, and while our North and South poles are locked in the cold embrace of eternal winter, the entire body of the sun is surrounded by a constantly luminous atmosphere, and the long lines of magnetic energy that play so rapidly from equator to the poles are warm and stimulating agencies which

should produce every species of life under the most favorable conditions of development.

The evolution of life in the broad expanse of the sun's fields of perennial verdure, boundless forests, mountains of grandeur, and vast oceans, lakes, and rivers, should surpass our highest conceptions of majesty and beauty. The Bible tells us of a land where shall be "no need of the sun or the moon," and where there is "no night," such a world the sun is, and we doubt not it has inhabitants similar to our own of the highest order of physical and intellectual endowments.

In fact as the sun is larger than all the planets combined, and controls the commanding electric life and energy of the solar system, by all laws of analogy in the distribution of life and development, it should be more highly endowed in all the elements of growth, living forms, and intellectual organisms, than the aggregate of all the planetary worlds. Nature is universal in her laws, and economic of all space and power, therefore there are no waste places in the universe, and in the sun where there is so much light and energy, by all the laws of nature and the universe, there are and must be equivalent results of life and being.

It is not unreasonable to conjecture that it is one of the abodes of Deity, or an archangel—that it is the spiritual centre as well as the material and electric centre of our system of worlds.

That it is one of the "many mansions in our Father's house" of which Christ foretold where the redeemed spirits of men made perfect, may dwell in perennial life, and grow in knowledge and perfection through æons of imperishable joy. It may indeed be the promised heaven of aspiring souls throughout all the solar worlds.

It is supreme folly to suppose that a globe eight hundred and fifty thousand miles in diameter, vaster than the one hundred and fifty worlds, satellites and asteroids in its sys-

tem combined, which it controls and feeds with life and power, should be doomed to ages of wasting, and finally to complete extinction, to make inhabitable a planet like our earth of only eight thousand miles in diameter, and perchance one or more planets. Besides having in itself conditions a thousand times more favorable to life and growth than all the planets combined, it should have teaming millions of the highest forms of created existence.

According to the Mosaic account of creation, light and water came before vegetable and animal life appeared. Moisture we know is necessary to distribute and diffuse electricity, and the sun being a vast electric body must for its atmospheric currents of electricity possess an abundance of water or moisture. Instead of having storms and terrific rainfalls, it may be watered like the earth before the flood when a gentle mist went up, and fell like dew on all the land.

As the cushion of electrified atmosphere around our earth reaches about two hundred miles into space above its solid nucleus, and the sun is over one hundred times greater in diameter, by the same law of proportion his atmosphere or photosphere, would reach more than twenty thousand miles into space from the solid globe on which its inhabitants walk. Its mountains would be proportionately vast and grand reaching into the magnetic ether over four hundred miles in sublimity of imposing altitude.

His deep broad valleys of tropical verdure and exhaustless supply of perennial fruits, luscious in flavor, and full of vitalizing nutriment, with magnificent expanses of ever-blooming trees and fragrant flowers, with cooling fountains, Eden bowers, and perennial delights, would make it a dream of heaven, a real paradise to aspiring souls of the highest ideality, and spiritual perception.

Its snow-tipped mountains reaching hundreds of miles into the blue empyrean, with their deep cool valleys and

towering forests, must present to its angelic inhabitants a gorgeous panorama of grandeur, as they checker its vast surface, and loom up in their celestial grace and beauty.

The supposed electric heat on its outer rim of atmosphere four thousand miles from its surface, does not effect or destroy its adaptability to the most favorable conditions and highest development of vegetable and animal life. We know that in our torrid zones, there is snow on the upper slopes of mountains only two and three miles high during the whole year, while at their base there is the heat and luxuriance of tropical life.

Scientists tell us it is because of the rarity of the atmosphere of the mountains, but they do not always tell us why that overcomes the heat of the sun, when we are many thousand feet nearer to it. Yet it is a fact as we ascend toward the sun we reach into regions of eternal snows.

The truth is, nearness to the sun has nothing whatever to do with the evolution of light or heat upon the planets; and Professor Proctor is wrong in saying, "That Venus, beautiful though she looks, would not be a comfortable home for us. That if our earth were set traveling in the path of Venus we would receive almost exactly twice as much heat from the sun as we do at present." The fact is we would receive no more heat than we do now unless we increased the weight and pressure of our atmosphere.

His statement is untrue because light and heat are evolved just where there is inflammable matter to supply them with light and heat energy. This is where they come in contact with the resisting dense atmosphere of worlds and planets. The electric rays of the sun pass through the dark cold rarefied ether of space without resisting force exciting these magnetic forces and thus little or no light, heat or force is wasted in space, and thus the light and heat energy of each planet are the reservoirs of energy that determine the supply of warmth and illumination they need,

The density of the earth's atmosphere near its surface resists the electric energy of the sun's rays and this resistance and friction produces light and heat, while the thin rarefied air of the mountain tops does not resist the sun's rays and no heat is produced.

Therefore in the shaded valleys and on the vast altitudes of the mountains of the sun are rarefied electric atmosphere, mild temperature and magnetized etheric matter capable of rearing life structures, and building wonderful organisms of physical magnetic and intellectual power beyond our highest conceptions. There they may understand the forces of electricity so perfectly that by a mere wish or volition they can transport themselves on an electric sunbeam with the speed of lightning from one point to another—from a valley to a mountain top, and disembodied themselves at will and fly on electric currents to the other suns or worlds, and be the swift-winged angelic messengers from heaven to earth. Who knows?

The fact that our sun is the material centre of the solar system and also the great electric life-giving centre, is strong proof that he is also the spiritual, intellectual centre of his family of planets, satellites and asteroids; of which according to a reputable scientist, he has over one hundred and fifty.

All scientists declare that the sun is the material and electric centre of the solar system, but as they profess to ignore and discard all that is spiritual they are not likely to accept that part of the proposition. It is of little moment whether they do or not, for as yet it is not capable of demonstration, and is presented only as a theory. But I hold it is both reasonable and natural from the most recent scientific knowledge of the sun and its magnetic electric action.

Nature's laws are uniform, and divine wisdom is the perfection of simplicity. The laws that govern an atom of

matter are the same as those that govern all matter, all suns and all worlds.

An atom, a primordial cell, a protoplasm, are tiny magnets or electric batteries, man and animals, suns and worlds, are only magnets and electric batteries of larger size, and varied form. In atoms and cells the electric centre is the centre of vitality and growth, it is so in animals and is also the central point of vital activity and instinct or animal intelligence.

The same is true of man, the electrical life-giving centre of his bodily organism is the brain, and there also is the spiritual and intellectual centre.

Now as all atoms, worlds and suns, are made after the same pattern, and all animal organism after very much the same pattern, and all have their electric intellectual and spiritual centres the same, we may reasonably conclude that the same law applies to sun-systems and world-systems. For nature's laws are uniform and universal. Especially may we do this now when the old scientific theory that the sun was a great ball of fire, where the heat was so intense that no living thing could exist on its surface has been exploded.

Besides our present knowledge of electricity causes us to believe that the heat on the surface of the sun is not much greater than in our tropical climes where the table-lands and mountain sides are delightfully cool and that the superior altitudes of the table-lands and mountain sides of the sun being vastly greater, would give every variety of the most delightful climate imaginable.

Creation draws upon all its life forces, for none are inert, to perfect and guide in the formation of all its varied structures.

As the bird builds its nest for the young that is to be nurtured within it, so the God of nature through his electric forces rears earth structures for the varied forms of life

that crown them with completeness, revealing harmony and wisdom. If this be true, then the sun and planets are adapted to the higher orders of life, and only a miracle could prevent them from being inhabited. There must be atmosphere where there is light, and light and heat and moisture where there are electrical forces, and all forms of creation being evolved from these forces; therefore all suns and worlds constitute a single unity, are fashioned in the same likeness, under the same universal laws and forces.

While this is true, and electricity and magnetism attract and repel, select and reject, move through body and through space, lift atoms and suns, warm, brighten and control worlds, yet in no case do they manifest intelligence in selection, or will-power in the execution of their marvelous works. There is not a change in body, or development in organism, or order of life, but is subject to the control of electrical and magnetic forces, yet in all these there is not the deviation of an atom or an influence from the laws of electrical order and control that indicate the presence of thought, or reason, or perception.

These forces always move in the same lines of order, bear the same elements, perform the same work in the same way, with the precision and swing of machinery. Magnetic and electric attraction and repulsion move with the velocity of light, and weigh all matter as in scales, and take charge of worlds and atoms, yet never vary from the exact measure of mathematical law. Their balance of matter is exact to the weight of an atom, and the inverse order of the squares of distances is always the limit of their power; and they are trusty guides in the network of living lines of strength unseen by the eye, but presiding over all visible structures. Oh! wonderful! marvelous! the foundations of all material structures are laid upon the unseen elements of space, and the intangible electric forces that move with the velocity of lightning, and the strength of Omnipotence.

Thus, we have resolved all law, force and power in the universe into God and electricity, and all substance in atoms and worlds into one atom—or one matter, various and diversified in its forms—but of one substance. This analyzed seems like simple materialism on one hand, and sublimated spiritualism on the other. If it is truth, it is God's truth, and the ages will prove and accept it. If it is not, it is nearer the truth than most of the accepted theories of science. Under the sensitive touch of these forces, in God and electricity, all matter is filled with the life currents of creation, and so far from being cold and dead it is warm with the constant flow of life forces around it, and within it, touching each atom with a commanding and warming energy. The work that evolves sunlight from broken electric currents upon the surface of planets, and carries it to every living thing upon all globes, that builds itself into every form of matter and life-growth on land and water—that carries forward the circulation of all fluids in living bodies, and earth structures—that warms and stimulates the secret fountains of life in all living bodies, waits upon all atoms, determines all motions, produces chemical changes, warms rolling worlds, promotes organic life, converts gases into solids and solids into gases, is that which electric forces are constantly performing, without rest or tiring, ceaselessly and eternally.

It is the creative energy of all worlds, controlling the material forces that fill immensity; yet it does not deny, but teaches that there is a great creative mind, that is "*God over all* and in you all," and this is but the vast machinery of his universe. Ah! it teaches more—that the perfection of creative energy in material structures reaches out after the higher and nobler forces of spiritual being—and recognizes that God is a spirit, and all reason and intelligence come from him as its spiritual centre, which is far above

and beyond all material and electric centres, powers and possibilities.

The fact that we can take up the story of creation and read it backwards to its beginning of order and life, catechise its forces, hear the hum of their industries, number the steps of their progress, is a revelation of something superior to matter, that presides over creative forces, thinks, reasons and commands all potencies of both matter and spirit. We found matter and electric forces subtle, refined, all-pervading and seemingly Omnipotent, which leads us to Omnipotence or God as the crowning glory of life and being. That sovereign agency that involves memory, perception, thought, reflection, reason, that presides over all will or mental potencies, is truly a greater factor in the world problem than all the material and electric forces, because it is sovereignty over all.

It is a personality or force that is self-asserting, self-determining, and self-guiding ;—it is a potentiality above matter which controls it, and all forces. This lifts the mind forces of man to a plane superior to all material forces, for he can will and antagonize and control them almost like Deity, which reveals his kingship, and elevates and ennobles spiritual forces. For spirit is supreme, and electricity is the medium and force by which it maintains its sovereignty over all matter.

As the best temples of creative work on our earth are for the human soul to dwell in, it is but a step to the sublimer creation of a peerless heaven for a sublime order of reasoning spiritual immortal beings.

Where clothed with the shining drapery of light, they shall abide in the dwelling-place of perfection and beauty. The suns of the universe seem best fitted as the place for their perennial abode. Here the human body is a battery and magnet of superior workmanship to any that the skill of man can construct, which responds to invisible thought,

reason, and will, and is the servant of them all. In it the soul holds an independent personality, separate from the brain structure, and are only joined at the sensitive touch of the magnetic forces that are the most refined, subtle energy of the body, and the communing force between life and body, mind and material energy. At such a point of union between the spiritual and material body the soul touches the magnetic keys of the brain, as the musician touches the keys of a well-tuned instrument and thus gives voice to thought and harmony. Thus we pass the open door of pure reason to a world of spiritual life, superior to our world of matter and electric forces, where "that which is born of spirit is spirit." The seemingly solid structures of planets, and their foundations of granite, yield a perfect obedience to a subtle magnetic force which is but an invisible line between a world of matter, and a world of invisible spirits.

What that personality in us is which we affirm in our struggles after possession, ownership and the comforts and pleasure, of life we cannot tell, we can give to it no measure or form that can be sketched by pen or pencil, it hides its presence as the world of pure spirits is hid from our view ; and it is but an invisible step thence to the presence of God and angelic spirits.

PART SECOND.

*Strange paradox! from clay and marble clods,
As God made man, so man makes gods.
What gods were they? Desire and Hope and Hate—
Creations of man's mind that must create.
Embodied thought, aspiring human soul
Climbing through ages to a higher goal—
Seeking light and truth beyond the path he trods—
One God made man, man hath made many gods.*

*Wisdom, power, love, these are his attributes,
The Christian's holy God whose goodness suits
The majesty of heaven. And climbing hills of love
From stars and suns, to central suns above,
At last we'll view his face with spirits free,
Like sunrise spreading o'er a boundless sea.*

*His suns and worlds are countless as the stars—
His jewelled finger prints. Through checkered bars
Of light and shade all life is shadow of his breath—
An uttered thought. And Law and Change and Death
His angel messengers. His Spirit Truth
Preserves the universe in fadeless youth.*

*The palpable Infinite! Who can know?
Mind from a mustard seed a world must grow.
The past the emblems of his power hath wrought
Whose thought created first creating thought;
And veiled in mists above Olympian throne
We know the unknown God is God alone.*

CHAPTER XV.

BELIEF IN GOD IS A SCIENTIFIC NECESSITY.

THE very highest authorities now assert that *a belief in God is a scientific necessity*. Alexander Campbell Fraser, professor of logic and metaphysics in Edinburgh University, the place once held by the illustrious Sir William Hamilton, has recently published two volumes of lectures on "Philosophy of Theism," which form a notable and very timely contribution to philosophical and religious thought. They are especially valuable in this, that they lift the argument out of the technicalities of the schools into a more intensely human atmosphere.

Professor Fraser's central contention is as follows:

In describing his position as theistic faith the author indicates that in his opinion the conditions of the problem do not admit of demonstration, or absolutely coercive proof. In a sense the solution to be hoped for is moral rather than intellectual. Nevertheless, belief in God is not reduced to the level of a subjective emotion or desire. It is on the contrary, Professor Fraser contends, the only hypothesis that stands between us and skepticism in which the very idea of truth or knowledge would disappear.

In proof of this we need go no farther than the procedure of science itself. The postulate which underlies every scientific induction is the intelligibility of nature, the belief in other words that we are living in a cosmos, not a chaos. The belief that the power at work in the universe will not put us to permanent intellectual confusion. Science, as well as our most everyday knowledge and

action thus reposes on an ultimate trust, which is not susceptible of demonstration. We may rightly speak of this trust as progressively verified or justified by every step we take in the intellectual conquest of the world; but however legitimate our confidence at no conceivable point in that progress or in any future progress can the thesis be said to be in a scientific sense *proved*.

The parallel in this respect between scientific procedure, and the moral and religious life of man is pressed home by Professor Fraser, with great force and felicity. The postulate of science is to be regarded as itself a theistic postulate so far as it goes; but it seems to recognize only the attribute of intellectual consistency. This trust in the uniformity of nature is ultimately however a belief in a morally trustworthy universe, that is to say, in a Being who will not capriciously or wantonly deceive those who put their trust in him. The inductive faith thus rests on a deeper ethnical faith. This faith more fully developed forms the presupposition of the moral and spiritual life. The presupposition is again precisely as in the case of the scientific postulate, progressively verified in ethical and religious experience, but is never lifted into the region of scientific demonstration. In either case, to demand proof as the preliminary to action would be to be cut off from the possibility of verification, and indeed to be condemned to absolute inaction and skeptical despair.

The same thought of the scientific necessity of a theistic conception of the universe may be further described.

In pressing home the theistic implication of scientific procedure, Professor Fraser's argument offers many undesigned, and on that account all the more interesting points of coincidence with Mr. Balfour's reasoning in "The Foundations of Belief." Both argue that all scientific reasoning as to the causation of events rests on a fundamental presupposition which is not itself proved, and is not

susceptible of proof, inasmuch as all proof takes it for granted.

The belief in natural law—the conviction that we are living in a cosmos and not in a chaos—is essentially an act of faith or trust. It cannot be proven by any accumulation of inductions, for the very intention of making an induction presupposes it, and each individual induction depends for whatever cogency it possesses upon this assumption.

Mills' labored confusion of logic and psychology in his futile struggle to remain true to the principles of a pure empiricism served only to bring to light the manifest circle in which attempts at empirical proof involve themselves. We bring the belief with us to the facts, and when we do so we find that we are able to interpret the facts in the light of the belief: in that sense and in that sense alone may the progress of science be regarded as cumulative proof, or justification of the soundness of the trust by which the whole advance has been inspired.

This immovable belief in cosmical law, or the intelligibility of the universe is rightly regarded both by Professor Fraser and Mr. Balfour as *pro tanto*, a belief in God; for it treats nature as a rational system, and therefore the product of an intelligence akin to our own.

We are told many observers remark all through Europe and in particular in France a reaction from the spirit of irreligion and materialism which has been so marked in this century. Writers like Burget and Brunetiere, neither of whom are professedly Christian, and Coppee who is a recent convert, lend to the French phase of this movement a peculiar interest.

Brunetiere delivered a discourse recently at Besancon, in which, after depicting the Christian idea as the only absolute in the world of change about us, says, "We do not admit any longer, as was the case twenty-five years ago . . . that infidelity and incredulity are the proof of

liberty and broadness of mind. The denial of the supernatural was in those times the essential trait of a scientific mind.

"Intoxicated with the thought that they knew more than their fathers, men boasted of having annihilated, suppressed, made ridiculous all mysteries. Voltairianism flourished and developed; its profession was a proof of refinement. If there are honest infidels who are in no way like the libertines of other times, and there are some such . . . who can give and do give daily an example of virtue, we are beginning to see that Christianity dwells in them without their knowing it, and continues to produce its effects. Happily one cannot put away in a few years all the refined morality which eighteen centuries of Christianity have given us. The absolute which we deny with our lips is found in our hearts at the moment of action, and that unyielding or underlying something which we impute to education or heredity is Christianity."

The orator concludes by claiming that the interests of France and religion are identical, and that the glory of France aside from all questions of party, requires that all Frenchmen recognize this truth.

Dr. Alexander Kent says, "Doubtless more or less of superstition has always been connected with every form of religion, and much that has been viewed as religion in one age, has come to be regarded as superstition in the next.

"But this is just as true of other branches of science as it is of religion. I say other branches of science, for I refuse to concede that religion is not a science. I hold that the facts that call for and justify it are as certainly present in the nature of man, and in the universe about him, as are the facts that call for and justify astronomy, chemistry and psychology.

"That these facts are not as yet scientifically verified,

coördinated and classified is doubtless true. But it is no more true of religion to-day than it has been of other sciences in days that are gone. How long is it since the facts of astronomy received scientific verification and were classified as a science. Only a few years. Yet the science of astronomy was as much a fact before it was discovered as it was to-day. The same is true of chemistry and alchemy, why should it not be true of religion? Is it not in essence that sentiment and feeling awakened in man by the contemplation of the universe of which he is a part? Does not the form religion take in every age and among every people depend upon the impression which the universe makes upon them? If this be true then every step in the path of real knowledge will be a step toward true religion.

"Now the question whether there is any solid ground for religion is simply the question whether man can find anything in the universe as it impinges on him and comes to expression in him that is worthy of his trust, his reverence, his love. Can he find in the order and harmony of the world without that which answers to the highest and best that he finds in the world within? If he can then is there ground for reverence, for trust, for love. This reverence, trust, and love we affirm, is the highest expression of religion. It rebinds or ties man back to his spiritual Father and beneficent Creator."

Dr. Kent says further, "If man's relation to his environments is the relation of effect to cause, if at his best man is the normal product of all the cosmic forces that have wrought upon him and in him then surely the power that shapes is as worthy of reverence as the character it shaped. If it be said the tiger and the hyena are as truly an expression of the universal life as the noblest man or woman, I reply yes. The animal expresses more than the plant, and the plant more than the mineral, but man more than

either, and man at his best immeasurable more than at his worst. Besides, man reaches his best not through ways of his own invention and devising, but by discovering and obeying the laws of the universe. Happiness is not to be found where one pleases to seek it. It is a matter of righteousness, of inward and outward obedience to law, and this law is not of our creation, but is rooted and grounded in the very nature of the Eternal."

"It cannot be questioned," says Dr. Geo. H. Combs, "that belief is hindered by the temper of the age in which we live. Ours is as it is so often characterized, 'a materialistic age.' Our culture finds its expression in things. Hindu civilization expressed itself in dreams and great religions. Greek civilization in immortal literature, and forms of perfect human beauty.

"Latter day civilization finds its expression in houses, ships, inventions—things. Now this temper is hostile to faith. We can live in but one world at a time. A man of affairs cannot live in a dream world, nor the poet live in the world of the practical and prosy. The scientist cannot live in the world of art and music, nor the artist in the laboratory. Only one world is real to us. And so colossal and exacting in its demands is this world material, that the spirit world seems all ghostly and unreal.

"Another difficulty, though you may wonder at it, is the average moral respectability of our living. We are neither saints nor sinners, and have not their vision. To either this world to come is real. Your great sinner never doubts the reality of the life to come. Your Macbeth, your Judas is never skeptical. Sin is a wonderful irritant and keeps the moral sense keenly alive. Nor do saints doubt. Stephen looks into the open heavens; the martyr's eyes are unclouded. Miss Willard dying, murmurs 'How sweet to be with God.' The saint and sinner are both impelled along

the way believing; one whipped by remorse, the other lured on by blessed visions.

"The revelations in science too in these latter times trouble us. The unfaith of the noted scientist tugs at our sure confidence. But ours is the needless fear.

"The scientist is authority only in his sphere. In his doctrine of matter we will follow him to the end of the world, in his doctrine of spirit we'll follow him not at all. His is the strength and the curse too of specialism. Let him stay in his own province. Let the shoemaker stick to his last, the painter to his brush, the poet to his music, the preacher to his sermon. The scientist has his limitations as well as other mortals. Looking always through a microscope does not help a man to see God. He who spends all his days in the study of a beetle is no authority on angel faces."

Another hindrance to belief is much of the popular teaching concerning the other life. Many a man doubts because he cannot believe in that horrible nightmare, the hell painted by theology, cannot believe that God gathers together a small flock on which all the infinite goodness is outpoured, and that beyond its folds there is a howling wilderness of lost and ruined souls; and lost and ruined forever, and rained upon by the eternal fires of a vindictive God. As they cannot believe this monstrous lie,—they give up altogether the belief in the life that is endless. Nor is the conception of heaven calculated to strengthen this belief. I mean the heaven as we are wont to speak about it—a heaven at its best inane, unattractive, featureless. I cannot remember the time when as a boy that I did not feel that I should be happy in London, in Paris, in New York. It did not attract me when a boy, nor in its popular presentation, its Mohammedan stiffness, its stationary calm, its unprogressiveness, does it attract me now. We need a

more biblical and richer conception of heaven, a theory worthy of the higher ideals of the Christian heart.

Our seer Emerson catches glimpses of the truth :

“ Not of adamant and gold,
Built he heaven stark and cold.
No, but a nest of singing reeds
Flowering grass and scented weeds.
Built of tears and sacred flame,
And virtue reaching to its aim :
Built of furtherance and pursuing,
Not of spent deeds, but of doing.”

CHAPTER XVI.

ATHEISM IS UNIVERSAL ANARCHY.

ATHEISM is universal anarchy, and the "fool that hath said in his heart 'there is no God,'" is the most pitiable, forlorn creature in all the universe. He makes himself a waif on the great ocean of time or eternity, without rudder, or compass, or hope, or destiny.

W. C. Brann, a noted deist, says: "Atheists have thus far offered neither argument nor evidence that had the slightest tendency to disprove the existence of a Deity—they have simply pointed out that science has demonstrated that the ideas of God entertained by the ignorant are untenable and abused. I concede that, but it has nothing to do with the question of a Superior Power, a Divine plan. The wisest men of the world once believed in witches. They taught alchemy and astrology. They interpreted dreams, and believed the earth to be flat. But must we give up learning because our pedagogues and professors once taught folly and falsehood? Must we eschew science because in its quest of truth it has made a million mistakes? Must we dispense with Philosophy because the gymnosophist sat for hours contemplating his own nose?

"Must we deny a Deity and consider ourselves the posterity of ancient protozoa, the grandsons of anthropoidal apes because we have learned that the world was not created in six days?

"Science has interrogated nature with some little success. It digs in the earth and speculates regarding its age. It traces the evolution of fauna and flora, observes the motions of the planets, and weighs the stars. It sees certain

matter in existence, and learns how it assumed its present shape, but knows nothing regarding its origin.

"It finds forces in operation which it calls 'natural laws,' but cannot tell how these laws became operative. It cannot tell whence life came or whither it goes. And the atheist pondering these things concludes that the universe is a dead machine—a *mecanique celeste* which exhibits order without plan, and exists without excuse. Science is well enough, but it is not the all-in-all.

"It can but dig out facts. Religion and philosophy alone can turn them to their true account, can explain their significance.

"Science is but one of the servants of religion and philosophy, yet atheists accept it as their patron saint, and go searching for God with pick and crucible, microscope and alembic.

"Science is as yet for the most part guess work. The Bible assures us there is a God, science fails to demonstrate that there is not. The atheist groping around in this mighty universe by the fitful glare of a scientific tallow dip explaining away Deity, is like Carlyle's 'critic fly' examining a plinth of the pantheon."

The atheist is a public enemy, because *atheism means universal anarchy*. Reduced to its last analysis it is the abrogation of all authority, the elimination of the word duty from the dictionary, the banishment of order from the universe. Withdraw the control of mind from matter and you repeal all those "natural laws" concerning which atheists prate so much,—you have confusion worse confounded. It does not follow that the atheist desires to despoil his neighbor or subvert government, because he disbelieves in the existence of Deity. He is a product more or less admirable, of a society made possible by a very general belief in man's responsibility to a higher power. In denying God he denies the efficient cause of his own moral concept, of his own civi-

lization, but to disclaim a cause does abrogate its effect. Denial of the law of gravitation from now until doomsday will not cause water to run up hill instead of down. The "naked facts of history" do not as they allege, show that in the same measure as religion lost its power and prestige, civilization and humanity increased."

The facts of history show that as nations have deserted their gods they have declined in glory—have grown corrupt, barbarous and cruel. Rome was atheistical in the time of Nero—it was fashionable to mock the pagan cult, and revile the Christian faith; and Rome was a maelstrom of savagery, a saturnalia of sin.

The wives and daughters of its most distinguished citizens danced naked in public with male debauchees. Poisoning had become a fine art, and parents dared not partake of food which their own children had prepared. The populace clamored for carnivals of blood, and the fashionables of the city, both male and female, applauded, while helpless human beings were devoured by savage dogs, or torn to pieces by wild beasts. Such were the baleful effects of atheism upon the noblest city of earth—thus did "civilization and humanity increase as religion lost its power and prestige."

If you will turn back your historic page but a hundred years you may get some faint idea of the effects of atheism in France. That nation was suffering an acute atheistical paroxysm when it was dragging its fairest women to the guillotine and cutting off their heads to make a hoodlum holiday, when it was butchering helpless prisoners by the hundred, when it was filling barges with women and children and sinking them while the populace howled with delight along the river banks, when she established tanneries at Mendon for human hides.

The very foundations of society were broken up—it was chaos come again during the "reign of terror," when France

was insulting, imprisoning and murdering her priests, scoffing at religion, and crowning a courtesan as "Goddess of Reason" at Notre Dame.

Never mind about the "Bartholomew Massacre." Everybody with an ounce of information knows that to be due to political scheming and hatred, and not to religious intolerance,—just as were the so-called persecutions in England, and the slaughter of Christians in Rome. Religious persecutions per se, and political persecutions under the guise of religion, have been bad enough and bloody enough in all conscience; but nothing in the history of the world can equal the depravity of Rome, and the cruelty of France while they lay under the awful blight of atheism.

The facts of history show that no people ever yet became civilized before becoming religious, or made intellectual progress after becoming atheistical. This statement will be denied by some ill-informed people who insist that the leading nations of the earth are even now atheistical. It is sometimes pointed out that not one half the people of America, the most progressive country in the world are church communicants. Quite true; but a man is not necessarily an atheist because he declines to belong to the church.

Because a man doubts the plenary inspiration of the Bible, and the efficacy of baptism, it does not necessarily follow that he denies the existence of Deity. A nation that is making substantial progress gradually purges itself of the old barbarous ideas of hell and everlasting punishment, and turns more and more to the philosophy of true religion, and broadens its concept of the Supreme Power; and this is still a deeply religious nation.

Atheists constitute a startling illustration of the axiom, "A little learning is a dangerous thing." They are familiar with all the obscene and cruel passages in the Bible, and that is all they know about the book. They can recite

the history of the Spanish inquisition, and the religious wars, the witch-burning and tongue-boring; but have no conception of the countless millions whom religion has reformed, ennobled, comforted in life, and cheered at the gates of death. They can recount how this or the other stupid priest or preacher has hurled his impotent anathema at the Jasons of science, but know not that through all the ages the church has been the nursing mother of education. They talk learnedly about what science has demonstrated, when in nine cases out of ten they could not distinguish between protoplasm and plum-pudding.

I do not deny one man may be in the right and the rest of the world wrong; but the great mass of the reading and thinking people of this nation are respectors of religion, and do not accept the doctrine of negation as true. Evolution has nothing to do with the case. It is idle to prattle of "natural instinct" unless you can tell us how they came to be natural; or of law unless you accept a lawgiver. Doubtless man's religious and social instinct and moral concept are independent of mere religious rites and ceremonies. But rites and ceremonies are not religion.

Of course it is as easy to conceive of matter without a creator, as to conceive of a creative power without an origin. It is perfectly legitimate to ask if God made the universe, who made God? That inquiry is entirely too large for the human intellect.

Its answer would solve all the mysteries of the universe, and make us omniscient like Deity.

But while the birth of a God is even a greater miracle than uncreated matter, when we see that matter governed by immutable laws we may reasonably infer a lawgiver.

When we see through the universe evidence of a mighty plan we assume that it is not accidental and purposeless.

Nature with God is one miracle; nature without God is a multitude of miracles; hence the man who believes in the

existence of Deity is not near so credulous as the atheist who derides him and must accept all things as a miracle.

If all life is a gift from God, then all the better impulses emanate from him also. Of course every atheist will ask where the bad ones come from. Whether the devil is responsible, or whether it was God's plan not to make the race perfect in the beginning, but develop it through the slow process of evolution, is a matter of belief. Had God begun with perfection in animate and inanimate things, and change been the order of the universe then as now, it could only have been change for the worse.

Atheists in denying the existence of a God, protest and deny that they were brought into existence by aught with a thinking apparatus, or intelligent power.

Were sentiment superseded by reason the word duty would disappear. Duty is the child of sentiment and can have no other origin. When a dog gives its life for its master, when a soldier dies for his country, when a mother starves herself that her child may live, they confute the materialistic thesis of self-interest—they sacrifice themselves for the sake of others and are governed solely by sentiment; which is often stronger than life.

Materialism declares "that self-preservation is the first law of nature," yet both men and animals refute that proposition by placing love above life. Love is a thing we cannot account for on any earthly hypothesis. We may say that the love of a man for a maid has its basis in passion, but is not this very desire a part of the divine plan. We may say the love of a mother for her child is necessary for its preservation, but if there be no sentient plan why should it be preserved?

Love is the most powerful of human sentiments. It is a divine passion, and was not born of the earth or sun, or material things, but emanated from the bosom of a great

spiritual being who transcends our powers of comprehension.

So far as science has yet been able to discover nothing exists uselessly—each has an apportioned place “in the scheme of things,”—the universal plan. So far as we know there is not a desire implanted in any division of the animal kingdom for the satisfaction of which there is no provision. If there be no God there can be no immortality, if there be no immortality then has nature failed to make provision for the gratification of the greatest desire of man,—and a natural law is demonstrated to be no law at all, but only an accident. The fish and the birds and the beasts are directly or indirectly useful to man—they serve a purpose, give evidence of a plan.

Now of what use is man? Whom must he serve? Is his sole mission to “propagate and rot”—to grope his way from the cradle to the grave? Is he “the sum and crown of things,” the lord of creation, the ultima thule of intelligence?

If so, nature has made another mistake, for he longs to yield obedience to a higher power, to serve a greater than himself, to be guided in his ignorance, and shielded in his weakness by a superior wisdom, a supernal strength. He seeks a celestial master—one to whom he can yield devotion, and suffer and die for if need be. Did nature endow him with a deathless love merely to slam the door of the sepulchre in his face, and shut him forever from those most dear? Science admits it does not know, religion and philosophy say it did not, while Ingersoll asserts that in the hour of death “hope hears the rustling of a wing.”

Of course the materialists scout the evidence of revelation, but this affords no evidence that there has never been any communication between man and his Maker, or that there is no “still small voice” from on high making celestial music in the human heart. Millions of intelligent and

trustworthy people have testified to having felt the divine power and presence.

All the atheist can oppose to this is the impression that they have not felt it. Millions have borne testimony to God's existence with their latest breath—with the celestial radiance upon their faces have told their weeping friends that they saw beyond the Isis veil and all was well.

To this atheists can only urge that other millions have not been so blest, and ask why. It may be answered that some natures are more earthly than others, and some more spiritual. The man who must be convinced by cold logic of God's existence is a spiritual wreck scarce worth the salvage.

Religion, like poetry and song, art and eloquence, must be born with a man and cannot be driven into him—it depends not so much upon fallible human reason as upon a subtler sense which puts the finite in touch with infinitude, and is a constant testimony—a perpetual revelation.

CHAPTER XVII.

MAN IS BOTH DUST AND DEITY, WITH ELECTRICITY AS THE CONNECTING LINK.

MAN is both dust and Deity, his body is of the earth, earthy, his soul is a part of God who gave it. And as he follows the instincts of his divine nature his progress is heavenward and Godward. The Deity within him mounts with spiritual vigor to the altitude of hope and joy, and he feels within his soul the benedictions of a god. Then he enters upon a better life, with nobler aims and loftier purposes. Then he recognizes that life is like a delicate piece of machinery affected by the touch of surrounding influences, and more perfect when in harmony with noblest environments. That life is like a machine more valuable for what it gives forth, than what it receives, and the true object of life is not happiness but usefulness. The divine edict "it is more blessed to give than to receive," is the colossal and enduring principle of earth's highest beatitudes. The world's toilers and benefactors, and not the rich and selfish climb to the mountain tops of exultant hope and joy.

Who nobly does must nobly think
The soul that soars can never sink;
And man's a strange connecting link
Between frail dust and Deity.

The deity in man is in the immortal vigor of his reasoning, aspiring soul—the spiritual body which is a part of the eternal, creative spirit. There is but one eternal spirit, and every human soul is an atom of the eternal spirit.

There is but one matter and all material things are created therefrom, and are but the aggregations of one invisible atom. There is but one invisible force, controlled by spirit and controlling all matter, and that force in the simplicity and harmony of nature is electricity.

Promætheus, the defiant captive, said to Supreme Jove, "Was it not almighty time and supreme destiny that welded me into a man?"

Man, the strange connecting link between dust and Deity. Man endowed with God-given intellect, who stands erect in the midst of creation, a reasoning atom built of dust, a blending of the finite and the infinite. The incomprehensible offspring of Deity, brought forth in time, the vestibule of eternity, to breathe a little space and grow till winged for flight in higher worlds. There to pass from star to star, and from sun to central suns and grow in knowledge and perfection through immensity of worlds, until he can stand in the centre of the universe by the side of the Almighty and comprehend its mysteries almost as well as his creative Deity.

With such a destiny man should look upon the trials of this fleeting earthly existence as but a training school for the university of heaven. Self-poised in the majesty of mind, the logic of reason, the incorruptible precepts of truth, and nobility of purpose, he should keep his head above the storm clouds of earth, and his soul bathed in the sunlight of eternal peace and love. He should accept what fortune bestows, nor rail at fate till life's joys are consumed by the fever of discontent, and the fires of existence put out with the tears of remorse.

Picciola well says: "Man is sent naked into the world, feeble, helpless, unendowed with the wings of the bird, the swiftness of the stag, the tortuous speed of the serpent, without means of defence against the claws or darts of an enemy, nay, even against the inclemency of the weather.

"He has no shell, no fleece, nor covering of fur, nor even a den or burrow for his hiding-place. Yet by force of his natural powers he has driven the lion from his cave, despoiled the bear of his shaggy coat for a vestment, and the bull of his horns for a drinking cup. He has dug into the entrails of the earth to bring forth elements of future strength. The very eagle traversing the sky finds himself struck down in the midst of his career to adorn his cap with a trophy of distinction.

"Nature has done wonders for the insect, for man apparently nothing. Because man, an emanation from God himself, and formed after his image, was created feeble and helpless as regards the organization of matter, in order to demonstrate the divine influence of that eternal spark which endows him with all the elements of future greatness. From time immemorial animals have displayed no progress in their powers. The character of their labor is that of exactitude and uniformity, that of man, diversity, for human labor arises from a free and creative faculty of mind."

Man, therefore, commits more errors than the animals, and is the best and worst of animals, almost justifying the cynicism of Byron: "The more I see of men, the better I like dogs."

Man has two bodies, as I believe, a physical and a spiritual, the spiritual permeating the physical, weaving it, and preserving its autonomy;—when death, the separation, comes, the physical body goes back to its earthly elements, and the spiritual, freed from its encumbering habiliments, like a flash of electricity, goes to the stars, the sun, or to the spirit realm, wherever that may be in the universe. The soul has a thousand worlds of destiny, the body but one. And the atoms that compose it consist of the things that we eat, drink and breathe, which have been used in a thousand bodies before us, and will be used in a thousand bodies yet unborn.

The cattle eat the grass, and we eat the cattle, and our bodies go down to the dust and make more grass, and other cattle eat it, and other people eat the cattle, and thus in the infinitude of progression and change do the indestructible atoms of earth make their continuous curriculum of existence—but the soul :

That spark once struck from Deity, breathed from his breath,
That made one living man, divisible, yet unimpaired,
Has thrown off other sparks of vitalizing breath,
Until that uncreated, creating breath, has brought forth millions,

Peopled nations, and the realm of spirits beyond the stream of death.

God made but two. It was enough to people endless worlds
Ne'er trod by living feet, or swept by wing of soaring spirit,
Through all the cycles of immeasurable duration as they ceaseless whirl.

Alas ! the material body must crumble back to dust and be absorbed into the bosom of mother earth, and come forth again in grass and tree and shrub. There is no resurrection of the body, and never can be.

That which is put into the grave never comes forth in its bodily form. There is for the once loved, beautiful, pampered human bodies no resurrection, no transforming life and beauty ; only the spiritual essence shall live on. The once fair flesh, distended by gases, eaten by worms, converted into whitened bones, grinning skull, and horrid skeleton—becomes the tragic, cynical antithesis of beauty, the shocking epitome of ugliness ; the wild, distorted nightmare of death and dark obstruction. Yet such all human kind have been, or shall be. And each atom will soon again perform its functions in air, tree and shrub, or other living body, as it has through all the cycles of revolving earth.

For the human being in anatomical analysis is but a handful of bone dust in a few bucketfuls of water. Therefore

we conclude that the Almighty would not do so useless and nugatory a thing as to resurrect a few bucketfuls of water and a handful of bone dust. And why should he raise up the worn-out, feeble, sick and decaying body which consists of what we eat, and is as the grass of the field, when he can get it and the same material everywhere, after it has gone through the electro-chemical purifying processes of nature, and all atoms of matter is the same matter?

The spiritual body separates from the physical at death and never goes down into the tomb. That is, our thinking, conscious, spiritual entity lives on forever and soars to the unfading realms of deathless spirits.

Then the Christian's confession of faith, which says, "I believe in the resurrection of the body," must mean the spiritual, not the physical body; and Job so meant when he said, "Though after worms devour this body yet in my flesh shall I see God." He meant after worms destroyed his material body his spiritual but seeming fleshly body should see God. Job's body that mingled with earth four thousand years ago, and has been in the bodies of men and trees and plants a thousand times since it went into the grave, has never come forth in its bodily functions, and never will.

There is no resurrection of the physical, but only of the spiritual body. Our bodies are a part of the earth-dust, consisting of the things we eat, therefore we are dust; our souls are a part of the Deity who made us, and breathed into us the breath of life, therefore we are spiritual gods, and we shall live while our creative Deity exists. And through the cycling ages of eternity we shall hold communion with the Father of our spirits.

This is a most consoling belief—but have we proof that it is more than a belief—a faith without evidence, a hope without foundation? I would answer: there is order and design in the universe, therefore there must be a designer.

There is law in the physical and spiritual world, therefore there must be a lawgiver. Evolution is not Deity, but the law he has impressed upon matter.

To say death is the end of man is to destroy "the eternal fitness of things," to question the wisdom of the Almighty, to dethrone justice, and make reason madness. Not an atom of the physical universe has ever been destroyed, and yet to make that which commands atoms and weighs and measures worlds, an evanescent thing that fades as the morning dew, or like the lost Pleiades drops into eternal darkness, is the contradiction of reason and the infamy of lies.

I am a believer in the soul-land of our future, the heaven of our dreams; whether that heaven be in the sun's iris or Alcione it matters not. The soul when free will know and find its destiny as the needle finds the pole, and the planets know their orbits.

To think, is to live on—to be ;
To love, is immortality.

The gift of reason, the promptings of affection, the hopes and yearnings of the soul are the prophecies and proofs of a future existence, where all these shall have their fruition and be satisfied, and the justice and goodness of the creator be made manifest.

Else creation is a failure, the universe a fraud, and men are thrice mocked dupes. Mocked by the phantom forms of earth's transient pleasures that ever lure with feverish joys, that soon depart, mocked by the glorious dream of a far-off and unfading heaven, that ever dwells in the aspiring soul like the promised beatitudes and benedictions of a beneficent and Omnipotent God. Mocked with the follies of hope, and the deceitful dreams of a hereafter, and the bitter trust in a demon of darkness, that to the longing soul seems a deity of ineffable light and love. If there is no hereafter to the human soul, the brightness and beauty of

earth is a delusion and a snare, and the gorgeous panorama of the revolving world with its pride and grandeur, but the fading shadows of an eternal night ; and the fruit of life like the apples of the Dead Sea, fair to look upon, but dust and ashes to the taste.

But creation is not a failure and the universe is not a fraud ; it is the beautiful, eternal home of God, and his spiritual children, the noble aspiring souls of redeemed humanity. Men are not thrice mocked dupes, but the kingly monarchs of time and destiny, the spiritual reasoning gods of boundless worlds and unmeasured duration.

Therefore the soul shall wing its flight through a thousand suns and worlds of destiny, and from sun to central suns shall study the wondrous works of God and nature, and grow in knowledge and perfection, in endless progression until it can stand up by the side of the Almighty in the centre of the universe and understand the mysteries of creation and enjoy the beatitudes of supremest bliss, almost as well as its creative Deity.

Thus the soul looks up to the eternal stars as the golden stepping stones along the pathway of immortality, where the islands of the blessed smile in perennial beauty, and our loved shall greet us on the blissful shores of the deathless eternities.

What a glorious destiny for the spiritual body, the soul, and what matter if the casket of decay, the physical body mix with the elements of the sea or land—dissolve in the salt beds of old ocean, or blossom in the grass and trees in congenial soil on the land ?

The soul invisible is greater than the visible, the unseen than the seen. You cannot nail it to the cross or puncture it with a spear. It can soar untrammelled where matter has been. Once created, ne'er uncreated in time, eternity, far or near. It must exist. The creative will that kindled it to birth can ne'er blast its glowing life, nor quench it in

the ocean of his wrath. The distant stars may fall, and nations perish from the earth; world upon world may vanish from their glowing path; all things may sink to dust, and all the living moulder in the tomb; time and eternity may perish in their onward flight, and darkness wrap the universe in chaos, death, and night, yet the soul eternal, the immortal, quenchless spirit shall live on in endless life, undimmed by age and death.

Great God! how cheering is the thought. With such a dream of destiny and such a view of life as this there should be no despondency, no gloom or sorrow. Our trials here and even death itself should be regarded as a stepping stone to higher bliss, and more perfect beatitudes in the realm of eternal love.

Standing erect in creation with the God within us, and the habiliments of flesh about us, and heaven and the universe as our eternal home, we are indeed the strange connecting link between dust and Deity,—we are both man and God, with the mysterious forces of electricity binding soul and body, dust and Deity, in the mystic bands of mortal existence. When these mystic bands are broken, and thus ends a human life;—no, not life, an earthly existence; for life once begun never ends. It may change its form, but Life is ever lord of Death, which is but the doorway to another life. When earthly existence thus ends, with all its hopes and joys, its griefs and strange fatalities, its earnest longings and its agonies of soul who shall answer, was it a failure or success? Who knows?

Who can explore the eternal verities of life and answer what is success?

The struggling soul that battles with time's tempestuous billows, and in the raging maelstrom of its surging seas goes down battling with all his strength, is it a failure? While he who glides o'er summer seas with kissing winds, and fragrant blossoms at his lip is borne by

favoring fortune on to wealth and fame. Is this success? Were the heroes of Thermopylæ, who went down before the invading millions of their country's foes, a failure? Was Socrates who drank the deadly hemlock; was the perfect Christ who suffered all the ignominies of earth, a failure?

No, the world must learn a deeper wisdom than the shallow aphorism, "Nothing succeeds like success." He who fails and is worthy of success, is a greater success than he who succeeds and is unworthy of it. Then truly there is something greater than success; there is one thing far greater than success, and that is to be worthy of it. And judging human lives by this standard only the far-reaching eternities can determine what lives were a success in this brief span of earthly existence. What lives obeyed the grosser appetites and passions of the flesh; and what lives felt the divinity within, and obeyed the godlike impulses of the aspiring soul.

CHAPTER XVIII.

SCIENCE IS THE CHART OF HUMAN KNOWLEDGE.

SCIENCE is the chart of human knowledge, and astronomy is the oldest, most sacred and sublime of all the sciences. We need no record to prove its ancient birth, for as soon as human curiosity looked out through the living orbs of the eye, it must have turned its gaze toward the silent heavens, and with emotion and wonder observed the starry hosts whose watch fires flame upon the measureless fields of ether.

There the eye could see the same stars blooming like fire-tinted blossoms, undimmed by the darkness of a thousand storms, unchanged by the lapse of a thousand years,—the same unchanging blazonry upon the battlements of heaven. The same sentinel star guards the throne of the North Arcturus and his sons are still circling around the Pole. Orion is still girt with blazing bands. The sweet influence of the Pleiades are still unbound, and the sign and season still numbered on the glittering belt of Mazzaroth.

But fear and superstition transferred the monsters of their own darkened imagination to the skies, and peopled the peaceful plains of heaven with “Gorgons hydras and chimeras dire.”

They made the celestial host arbiters of their own destiny, and gods of their own worship; whose mysterious power was supposed to rule over men with an all-pitiless destiny. They made malignant demons of heaven’s pitying stars, and sought to avert their wrath, and secure their favor by strange offerings, and forbidden sacrifice.

The devotees of Baal and Astoreth burned incense and made night hideous with perpetual fires in high places, in worship of the hosts of heaven. The Persian made altars of his mountain tops, and bowed himself morning and evening to adore the god of day. In the valley of the Nile and the Euphrates, amid the snow-capped mountains of Thibet, the table-lands of Central Asia, spotted by the moving tents of Tartar and Mongolian, beneath the sunny skies of Greece, the cold mists of Germany, and the roofless temples of Druidic and Scandinavian mythology they studied the awful mystery of the stars, and superstition became worship.

Such was astronomy in the earliest ages, but in modern times it has become the most exact, the most fascinating and sublime of all the sciences. The astronomer has rejected the fables and superstitions of the past. He makes his vast estimates of numbers, time, distance, magnitude, with mathematical accuracy. He finds that the night has not lost a gem ; not a single ray has faded from her ancient glory. He sees the calm immensity of worlds look down with the same silent pity upon the pride and contentions of this war-cursed earth, as when there was confusion of tongues at Babel. We think it a long voyage to cross the Atlantic, yet we should have to travel that distance ten thousand times before we could reach our nearest planetary neighbor.

To reach the most remote of our planetary system we must travel a million times as far as from New York to San Francisco.

Our earth is twenty-five thousand miles round, and yet light flies with such inconceivable velocity that it would compass our earth almost a thousand times while we deliberately pronounced the word earth. The nearest star which we see in the heavens is so far remote that its light takes three years in reaching our eye. The light of the Polar star which guides the mariner at night left its distant

home before the birth of some already grey with years; the quenchless ray has been flying across the abyss of space nearly two hundred thousand miles at every swing of the pendulum, and it reached the mariner's eye only this minute, and it could not be lost until it has accomplished the errand of its destiny.

The nineteenth century has made greater progress than all others combined.

It is well at the close of this wonderful century, to pause and consider the marvelous advance it has made in material and intellectual progress.

What has the century been worth to the race, how much has man learned about himself, about the globe he lives on, the heavens above, and the earth beneath, the sea, the air, the universe?

At the beginning of this century, railroads, steam ships, telegraphs, telephones, phonographs, sewing machines, typewriters, reapers and mowers, and all their attendant comforts were unknown. Then the ox team, the mule train, the sail ship, were the only means of transportation, and it took weeks to go a few hundred miles by land, and months to cross the ocean. Now we can traverse the continent or cross the Atlantic in five or six days.

How little we knew a hundred years ago, and how much we know now, is a marvelous contrast. "The little chemistry book of that day did not contain the word 'Oxygen,'" says Professor John Fiske, "though that element is now known to make one-fifth of the atmosphere in volume, eight-ninths of the ocean by weight, besides forming one-half of the earth's solid crust, and being the element that makes the fire burn. Then matter was not known to be indestructible, a truth on which all chemistry rests." Neither were the elements of water, air nor earth known. Steam and electricity had not been discovered or utilized.

A little over a hundred years ago the most learned ge-

ographer could draw but a very imperfect map of the earth, and how little could he be expected to know of the heavens? Astronomy was almost unknown. From the days of the Chaldean shepherds no additions had been made to the solar system—the sun, moon, earth, and the stars visible to the naked eye represented the known heavenly bodies, of which little was then known.

Herschel's discovery of Uranus in 1781, was the first addition plated to the old original heavens. The discovery of Neptune came in 1845; the distance to a star was first measured in 1839; and the ingredients of the heavenly bodies was not ascertained until 1861. Through the invention of the spectroscope it was found they were composed of materials "to be found in any drug store"; that there was hydrogen in Sirius, and salt and potassium, lime and iron in the sun. One metal, helium, was first found in the sun, and was afterward found in Norway.

Within this century man has settled in his mind the shape of the earth on which he lives, and has learned the nature of the air which supports his existence, the properties of the food he eats and the water he drinks which constitute his body, and the fire which warms him, and the light that illumines his home. He has learned the weight and distance of the stars, and has studied "time-tables" which may be said to regulate their vast journeyings. How much did he know before he mastered these things? How much did the most learned man know a hundred years ago? Surely "the wisdom of the ancients" was a jest or a figure of speech to excite superlative irony. Within one hundred years man has learned most of his own physical frame, and is seeing himself as others see him,—not only outside—but inside. He withdraws his gaze a moment from the heavenly constellations to contemplate a bullet in his neighbor's spinal column by the light of the wonderful Roentgen rays.

The latest opinion of Lord Kelvin based upon the work of the geological ages, estimates the age of the earth since it was sufficiently cooled to become the abode of plants and animals, to be about twenty million years, within limits of error perhaps ranging between fifteen and thirty million years.

This nearly agrees with another by Clarence King from similar physical data, and has generally been regarded by geologist, says Warren Upham in the *American Geologist* for October, 1897, as too short for the processes of sedimentation and erosion, and for the evolution of floras and faunas of which the earth's strata bears record.

More probably as ratios and computations by Dana, Wallott and others somewhat harmoniously indicate the duration of time since the beginning of life on the earth has been three to five times longer than Kelvin's estimate, or from sixty to one hundred million of years.

The larger figures imply from the dawn of life to the development of the Cambrian and Salurian faunas probably 50,000,000 years, thence to the end of the paleozoic time perhaps 30,000,000 years; onward through the Mesozoic time about 15,000,000 years.

Astronomers now claim that the recent powerful telescopes have reached the limits of the universe. Professor Simon Newcomb says, "Evidence is accumulating which points to the probability that the small stars which our modern telescopes have brought to view, do not look small because they are further away but by reason of their inferior size. There are no more beyond. In other words we are actually able to see the boundaries of our universe. Of this universe we know the general form. It has the shape of an enormous disc, the solar system being not far from the centre. The distance across the disc from one side of the universe to the other is twenty to thirty thousand light years. A light year is the distance which a ray

of light will travel in one year, the rate being 186,000 miles a second.

"It takes a little over eight minutes for light to come to us from the sun which is 93,000,000 miles away. We can see about 5,000 stars with the naked eye, with the most powerful telescope we see perhaps 50,000,000. All the stars we see are suns. The tiniest speck of light that we see in the heavens at night are comparable with our own stupendous luminary. Some of the stars are vastly larger than our sun, which is rather a small star than a big one.

"The stars called Alpha Lyra and Sirius, are giant suns. The latter has twenty times the mass of our sun, and shines with one hundred times the brilliancy."

Professor Newcomb says further, "When you gaze upon the Milky Way, you are looking through the disc edgewise from the centre. The Milky Way is observable as a stream of stars continuous all around the earth, it is the disc of which I speak. Our sun is itself in motion. The earth is being carried unceasingly onward by it through space toward Alpha Lyra at the rate of about seven miles per second. When shall we get there? Perhaps in half a million of years, but get there we will.

"The star that has the swiftest motion is known as '1830 Groombridge.' Its velocity is at least 200 miles a second. It would make the journey from the sun to the earth in five days. There is no known force in nature that could have set it in motion at such a rate of speed, and no force can ever bring it to a pause. It must have come into our universe from without. We may imagine that many million years ago this swiftly moving orb, surrounded very likely by a group of planets, was approaching our universe from the outer void of space. The inhabitants of those planets saw a small patch of light appear in the distance ahead. The patch was our universe. As time went by age after age elapsing, the patch grew larger and brighter

until it split up into constellations. And later 'the runaway star' found itself traveling through the great starry stream of our Milky Way. Many millions of years from now it will pass out of our universe. It will see the constellations gather together in an opposite direction, and diminish and fade till our universe is lost to their most powerful telescopes.

"Where will it go? Who can say? Space is infinite, the room occupied by our universe is trifling. There is unlimited room for other universes separated from ours by such inconceivable distances that the light from their stars or suns never reach us. For all we can tell this 'runaway star' may have come from some other universe beyond the dark void, and may be bound on a visit to yet another."

What soul can contemplate the universe and not recognize the power and beneficence of the creator, and the boundless grandeur of its immensity?

Christ said "in my Father's house are many mansions." "I go to prepare a place for you, that where I am there ye may be also." What Christ meant by "many mansions," was many places of abode in the universe for human souls. Science verifies Christ's statements when it says there are fifty millions of suns and worlds already known and seen by our mightiest telescopes, all of which may be and likely are inhabited by living creatures.

Science is the chart that numbers the stars, lays down the limits of constellations, and the pathway of suns, and explores the physical universe. Religion is the pilot of the soul to the fair fields of heaven, the communion with the Father of the Spirit, which is profitable not only in this life, but in that which is to come. It is the adjustment of our spiritual nature to the invisible spiritual realities. It is the necessity of our nature and perfection of our spiritual existence, and brings us into harmony with God and his beneficent purposes in the creation of all things.

Let us consider for a moment the lamps of the heavens. Sirius, the most brilliant of the nightly illuminators, is equal to nine ordinary stars of the first magnitude in brilliancy. It is one of about one hundred of which the distance from us is known, being about 600,000 times the distance of the sun, or about nine light years. That is to say, light from the sun that reaches us in eight minutes, and from the moon in about one second requires nine years to flash across the space intervening between us and the Dog Star.

The Egyptians called it Anubis the Dog, because of its supposed watchful care over the husbandman. Its appearance marked the beginning of the Egyptian year, and the annual inundation that fertilized the valley of the Nile. They regarded it as a beneficent star and the residence of the Goddess Isis, while the Persians called it Tishtya and dreaded its malign radiance as the cause of summer draughts, and of disease among men and cattle. It was also regarded as a star of baleful influence among the Greeks and Romans.

Among the ancients the cluster known as Hyades were called *Suculæ*, the "Pigs," the idea prevailing that the big star was the mother of the litter.

In Grecian fable the Pleiades were the daughters of Atlas, and the ocean nymph Pleione whom Jupiter, to save from the clutches of Orion, changed into pigeons and placed them among the stars. The "lost Peiad," it was said, wasted away from weeping over the fall of Troy, or according to others had withdrawn her light from shame at having married a mortal. This was in explanation of the fact that only six stars could be counted in the cluster, when there were seven daughters and the early astronomers had reckoned seven stars.

The Milky Way according to the American Indian, is the "Path of souls," leading to the villages in the sun. Along

the pathway travel the spirits of the dead, and the brighter stars are "the camp-fires for their solitary journey to the land of the hereafter." The Japanese term the Milky Way, "the Silver River of heaven," and tell a pretty legend of the Spinning Maiden who crosses this river once a year on a bridge made of doves to meet her Shepherd Boy, and the "meeting of the star-lovers" is celebrated throughout Japan.

Dr. George H. Combs says, "A thousand years ago this world of ours was regarded as central, primal—the all, for it all other things were created, for it the stars shone, for it the sun poured down its wealth of gold. Then men grew wise. Then it was declared that the world was not the all, not primal and central, but only one of countless worlds, and insignificant at that—a mere speck in the boundless universe. Once more, this world which has been pictured as an idyl is the child of storms; that it has been marked by cataclysms, revolutions; that it has been ever a battle-field, and is stained with blood; that it is one colossal cemetery, and even the flowers of the day draw their gorgeous coloring from the grave. Look again and so universal is the reign of law, so little is there of seemingly divine interposition that the thinker concludes that there is no place in it for God."

Again he says, "What is civilization? It is concrete knowledge, applied knowledge. Now does civilization stand for happiness? Is the civilized man happier than the uncivilized man? It is at least a debatable proposition. Look at three marks of civilization, fashion, trade, the city. From barbarian in his simple coat of skins, your primitive woman in her graceful garment of a single piece, to the frills and furbelows of modern fashion. From contrast we learn to reason more broadly and more truly. Max Nordeau says that if a coffee mill were able to reason *that* from its data it would always associate motion with a

crank and a woman's arm. The coffee mill knows nothing of motion in any other form. Given a crank and a woman's arm, and you have motion. No crank, no woman's arm, no motion. There you have it. How many of our thinkers go no further than the coffee mill stage; their data is absurdly limited, their conclusions childishly superficial, and with profound ignorance they bow Jehovah out of his world."

But a riper knowledge brings sanity and faith. Said one of the greatest scientists of England only a few days ago, "When I began the study of nature I was skeptical; looking deeper I have come back to the faith of the Breton peasant. 'Protect me, oh, God! for my boat is so small and thy ocean is so large.' Could I only go further still I should have the faith of the Breton peasant's wife."

Is it true that "in much wisdom is much grief, and he that increaseth knowledge increaseth sorrow"? Is not rather the converse true, that increasing knowledge brings increasing happiness? Is there not joy in knowing? Are not those who increase the horizon of our minds benefactors? Do not our pulses tingle at the discovery of even an island in the great ocean of truth? Yet in increasing knowledge there is a process of disillusioning. The steps from the cradle on, are ever under the curse of disenchantment, and the shock of disappointment when the mists and myths of early youth are dissolved in the clear shining of the sun of knowledge.

With this great flood tide of modern knowledge, with the thousand comforts, pleasures and luxuries unknown to the ancients, this age and generation ought to be the most greatful and contented in all the history of the world. Is it? The poorest man for a mere trifle in expense can enjoy luxuries Alexander could not command when he conquered the world, or Cæsar when he ruled its empires.

But has not the rapid rush of material progress made

man restless, ambitious, and careless of the higher aims of life in the struggles for sordid wealth and pampered selfishness?

The world is not so thickly populated that the struggle for existence and the intensity of competition should crowd any off the stage of action, such as the numerous suicides in recent times would indicate. "Not until the close of this century," says the *Philadelphia Times*, "has the dominant races acquired the capital and the practical arts which enabled them to enter upon and possess the world's wide wildernesses." Many thousand years have passed since the Creator told Adam to subdue the world, and yet well-nigh one half of it knows no human subjugation. Europe is densely populated, Asia has an oriental civilization and dense population except in the central and arctic region.

Everywhere else the earth is in a sort of infancy, with vast uncultured areas. In the United States only one-fortieth of its area is claimed for agricultural purposes. The same is true of Canada, Mexico, Central and South America; they have eight millions of square miles, much of which is a desolation. Africa is like a newly discovered continent. There is the vast continent of Australia, as large as the United States and New Zealand. Here is half the land surface of the earth virtually unoccupied.

It is not so because it is inhospitable, on the contrary it is the richest part of the world in natural resources, and even what was known as the great American desert yields year by year to the encroachments of man. These regions are traversed by some of the mightiest streams on earth—as the Mackenzie and Frazer of Canada, the Columbia, Green, and Rio Grande rivers of the United States; the Niger, and Congo and Orange rivers of Africa, the Orinoco, Amazon and Platte rivers of South America and the Murray and Darling rivers of Australia.

On such streams civilization began, and on their banks it

has always grown to its noblest puissance, as on the Euphrates, the Nile, the Danube, the Elbe, the Volga and the Mississippi. It was the pursuit of gold that sent the Spaniards to Mexico, Chile and Peru; its discovery peopled California, Australia, New Zealand, and South Africa, and it will do the same for the Yukon and Mac-kenzie valleys. But gold is not the best thing these vast regions possess, they have the elements for vast empires and republics where millions of the human race may dwell in happy homes, and attain all that is noblest and best in this earthly existence.

Let those who are sore-pressed in the struggles of life in densely populated sections, seek new and broader fields of usefulness and activity, and without fear or repining, or thought of suicide or discouragement, go forth and possess the waste-places of the earth which beneath the magic touch of intelligent toil will "blossom as the rose."

This will be done, and the progress of the twentieth century will keep pace with the marvelous progress of its glorious predecessor. All nations will soon be as one family, and the race of man as one brotherhood.

CHAPTER XIX.

RELIGION IS THE PILOT OF THE SOUL TO THE FAIR FIELDS OF HEAVEN.

SCIENCE is the chart that gives us the boundaries and framework of the universe,—and explores the physical creation to ascertain the nature and properties of all visible things organic or inorganic.

Religion deals with the spiritual and invisible realities, and is the pilot of the soul to the endless futurities. Man is a religious being, and in all the ages of the past and in all countries has worshipped and bowed down to a supreme being. So universal is the religious element in man that we are compelled to recognize it as a part of his nature, and strong proof of the existence of Deity. It is founded in the deepest wants of his nature; for the rude tattooed barbarian, and the most civilized cosmopolite feels the necessity of relying on a higher power than themselves, in times of trouble or dissolution, and need the consoling faith in a beneficent Deity. In the bungalow of India, the bush houses of Australia, the wigwams of the American aborigines, the hut of the hunter, the cottage of the poor, and the palace of the European ;—where every man dwells, he feels the need of this consoling power, and in some form or manners manifest his religious nature.

God never made a skeptic, and there is not a real unbeliever in the universe. There are those who feign unbelief, and sneer at ecclesiasticism, and reprobate priestcraft, and scorn hypocrisy, and scoff at so-called religion. But they are believers. They believe in themselves, and believe God

made them wiser than their fellows, or even than himself. They do some good in pointing out the follies of religionists, and a great deal more harm by endeavoring to tear down the only props upon which mankind can lean for support and consolation. They talk wisely of Darwin, Huxley and Herbert Spencer,—exaggerating their teachings. They usually deny all invisible powers and realities, and recognize only visible things and agencies. They forget to quote from Darwin's declaration "Science as yet throws no light on the far higher problem of the essence or origin of life." Or where he says, "the essence of the attraction of gravitation is an unknown element."

Or where he approves the statement of another "That it is just as noble a conception of Deity to believe that he created a few original forms capable of self-development into other and needful forms, as to believe that he required a fresh act of creation to supply the void caused by the action of his laws." They will tell you that Darwin claimed man came from a monkey but fail to state his real position when he said at the conclusion of all his great work in the last pages of "*Origin of Specie*," "I believe that animals are descended from at most only four or five progenitors, and plants from an equal or less number."

Darwin, Huxley, Tyndall, Spencer and all scientists acknowledge the invisible forces in nature.

They recognize life as an invisible force, and its origin a mystery.

The same with reference to attraction of gravitation, electricity, light, and heat, why should they hesitate to recognize soul and spirit which is only a step higher in the invisible forces and realities? Why should any one hesitate to accept them as the eternal verities. Would they put themselves in the position of the man who would believe nothing he could not see, and was forced thereby to deny he had a backbone. Or in the position of the one who

would believe nothing he could not understand and was forced thereby to deny that he lived, for of all things life is the greatest mystery, and the least understood.

Religion was intended for man, and man for religion, just as the locomotive was constructed for the railway track, and the railway track for the locomotive. And while the locomotive continues on the track prepared for it, it bears the burdens of commerce, and speeds over the hills and vales with the swiftness of the antelope but with more untiring energy, outstripping in its course the very winds of heaven, but when it runs off the track it is wrecked, ruined and destroyed, and is no longer useful or profitable. So, with man, while he continues on the track of religion which fits his being, his aspirations and his destiny; and which was prepared for him by the Builder of the Universe, his course is upward and onward. With his head erect in conscious knowledge of his lofty destiny, he treads with vigor along the paths of peace, honor, and moral integrity, and seems what he is,—the conscious atom of a God. But when he gets off the track of religion, and violates the purpose and harmony of his nature, and is in discord with the creative Father of his spirit, then is he like a fallen angel, a degenerate spirit, a dethroned and crownless deity, wandering aimlessly as a waif amid the mysteries of creation. God pity the man who has no religion! In all the universe he is the most pitiable object, for all others have a purpose in harmony with their creation, but he, he is a floating, lonely speck, in the waste of time; a rudderless barque, on the dark surging ocean of eternity.

Men have given us a variety of definitions for the word religion. One has told us "it is a belief in a divine God." Arnold says that, "it is ethics plus feeling, or morality touched by devotion." These definitions are very well, but they do not cover all. Felix Adler says "it is the relation of man to the invisible reality." A definition which he

says is broad enough to cover all nations and religions, from the lowest forms to the highest. We know a life of conscientious morality will be rewarded in the other life, but this is not enough. What is it that causes man who is lying on a sick bed to smile with contentment? He has discovered that he has a soul—a something that physical ailments cannot touch.

Religion is that something which sustains, redeems, and consoles man in times of need. And while that sustaining power is invisible it is none the less real. Man must recognize the truth of holy writ, "the invisible is greater than the visible, the unseen, than the seen."

The spiritual body within him smiles at death, and all the terrors of the grave, knowing that the tomb cannot grasp its viewless form, nor earth hold its unchained spirit.

I draw a sharp distinction between ethics and religion; though they are nearly related, and one includes the other. Ethics applies to man's relations to his fellow men, and the visible realities. Religion includes these, and also man's relation to his Creator, and the invisible realities. A man may be just and honorable, benevolent and charitable to his fellow men, pay his debts, keep his promises, and be true in all the relations of life. These are the requirements of both ethics and religion, but that is not enough, religion requires more than this—he must recognize and reverence his Creator and the invisible powers that sustain him.

Are there invisible powers and realities? Science and religion both affirm there are, and all nature demonstrates it. The power that hurls the earth through space, a million miles a day, and revolves it on its axis a thousand miles an hour, that lights the sun, and holds the universe obedient to its laws, is invisible and omnipotent, and by its beneficence demands our reverence. In our own bodies we have the proof of invisible powers that reason for it, and govern it, the proof of an invisible spiritual body, the offspring of

our father spirit, to whom we owe eternal fealty and worship, "in whom we live, move and have our being."

All great institutions are but the shadows of great men. The American Republic was the product of five great Americans. Washington, who commanded the army; Jefferson, who fulminated true democracy; Madison, who formulated the constitution; Hamilton, who persuaded its acceptance; and Marshall, who construed it. Judaism, that wonderful people, was but the colossal shadow of Abraham and Moses. So the most powerful empires of the world were but the shadows of the military genius of Alexander, Cæsar, and Napoleon. When they passed, their glory faded into enduring shadows of thought and history, that still linger like footprints on the seashore of time, reaching to eternity. And Christ the immaculate and perfect One is the inspiring, uplifting force of the modern centuries.

Said a savage chief to a missionary, one event is always the son of another, and we must never forget the parentage.

Napoleon said: "Alexander, Cæsar, Charlemagne and myself founded empires on force, and they perished; Jesus of Nazareth alone, a crucified Jew, founded his kingdom on love, and at this hour millions of men would die for him."

Guthrie said: "Liberty without the Bible is either dead or delirious."

Alexander Hamilton said: "The word of God is solid, it will stand a thousand readings, and the most frequently and carefully, the surest of finding new wonders there."

Wendall Phillips declared: "The answer to the Shasta is India; the answer to Confucianism is China; the answer to the Koran is Turkey; the answer to the Bible is the Christian civilization of Protestant Europe and America."

Of all the religions of earth, the Christian religion is the only one which gives us hope and assurance of eternal beatitudes beyond this earthly existence. Like Coifi, the heathen high priest, we must acknowledge that all heathen

deities are worthless, as when he spoke to King Edwyn, saying :

"O mighty king! Of what good is our religion? Does it not leave us in thick darkness of ignorance about the great future beyond this life? Like birds that fly about us for a season, then fly away out of our view, we know not whither, so we for a little while on this earth soon pass away, and no eye can follow us.

"If the Christian can tell what that life is that begins when our hearts stop their beating, what our souls behold when our eyes have ceased from seeing, where they dwell when the grave has shut over our bodies, then let us receive his teachings."

Dr. J. E. Roberts says: "Pius and unsuspecting hypocrisy professes to love Jesus. Why should any man love Jesus? It is a better thing to love oneself." This is the old selfishness of skepticism, that continually mutters, "who is the Lord that I should serve him." They rail at the Almighty like the envious Cassius at Julius Cæsar, saying, "upon what meat hath this our Cæsar fed that he hath grown so great?" He further says, "The world has been ruled by the dead too long. The present need is of love, genius and power, clothed with flesh, not with grave-clothes. One simple, kindly human life and true, here and now is a more potent factor in lifting the world from suffering and wrong than all the Christs that are dead." But the reverend skeptic should remember that but for the unselfish love of Christ the great exemplar and redeemer of the world, there would be fewer "simple, kindly human lives and true." That his immaculate life and vicarious death is a "most potent factor in lifting the world from suffering and wrong," and that the Christ that was dead is alive again, and by precept and example ever lives and reigns in the hearts and lives of men. And the great loving heart of Christ never taught us that "it is a better thing to love

oneself"; but "love one another—love thy neighbor as thyself—love thine enemies—and love the Lord thy God with all thy heart and soul and mind," these are the perfect teachings of the immaculate Christ.

The selfishness of "love thyself" had been taught in all the ages gone before, and is still taught by all skeptics, but Christ set up a doctrine as far superior to it as the sun is superior to a wax taper.

One should be slow to condemn any religion. All religion is intended for good, and is the inward feeling, and outward expression of a desire to serve God and humanity. The religious principle is inherent in all human nature.

All religions are imperfect, either in doctrine or example, except, if you will allow me my personal judgment and belief, except the doctrine and example of Christ. Christ was perfect, and his teachings require perfection in humanity. In him was no guile or malice or evil thing; he was "without spot, and blameless." This is true whether we regard him as merely a man, or a god. He was a perfect man, and a perfect man is a god, for it requires infinite wisdom and goodness to be a perfect man—and that infinite goodness and wisdom constitutes the eternal godhead. Christ is the only absolutely perfect character in practice and teachings in all the history of the world.

The motto of the world was, "love your friends and hate your enemies," but he taught the divinely perfect doctrine, "love your enemies," "do good to those that despitefully use you and persecute you." "Do unto others as ye would that they should do unto you." "Love thy neighbor as thyself." "Give unto God the things that belong to God, and unto Cæsar the things that belong to Cæsar." He not only taught these divine doctrines, but through all his whole perfect immaculate life practised them perfectly, and lived like a saviour and exemplar of men, and died like a redeeming god. His life and teachings have blessed and trans-

formed the world, and when they are generally followed by humanity they will bring the peace and joy of the promised millennium.

The ethical tenets of Emerson, Kant, Carlyle, and the more idealist school of philosophical thinkers of this country and Germany constitute what is known as a rational religion. Religion does not require any exact formula of doctrine, or form of external devotion. Religion is a matter of belief, of faith. It is the recognition of God, the belief that *“he is, and that he is the rewarder of them that diligently seek him.”*

Emerson says, “There shall be a new church founded on moral science, the church of men to come.” He adds, its membership shall be found everywhere. “They may, or they may not profess any doctrinal belief, subscribe to any or no formula or creed, but they are one in this supreme unity which no heresy can dissolve, no schism ever impair—the resolve to live their lives to the best possible advantage for themselves, those who are dependent upon them, and the community of which they are a part. It will appeal to its members in the name of conscience, duty, justice, the higher life, sacrifice for others, and morality in all its aspects.” This religion bases or constitutes its highest praise of God, to be the doing good to his human creatures, which is not a very bad sort of religion, but still it leaves off the highest requisite, the recognition and reverence of Deity himself. It claims “that religion has never been built upon professed beliefs in incomprehensible statements, but must be a thing of beauty, based upon moral truths and facts. They proclaim no dreary creed about the world lying in wickedness, but on the contrary claim it is full of goodness and worthy emotions, could these be but aroused and inspired.” But here arises the difficulty again, it takes the recognition of responsibility to God as well as to man, “to arouse and inspire” worthy emotions and goodness,

It is said that "lawyers have been and are to-day firm believers in the Christian religion." If true, there is a logical reason therefor, as explained by Dr. Northrup. "Lawyers," he says, "are the students of jurisprudence. Jurisprudence is the science of law. Religion is the jurisprudence of divine law. The divine law of Christianity is based on three essential beliefs. First the existence of God, second the immortality of the soul, third the divinity of Jesus Christ, and his atonement. From the earliest history of the common law down to the present day, not only has the law itself been based on the law of God, but all legal forms and proceedings have been so instituted and devised as to continually assert and keep before public eyes his power, his truth and his righteousness. The judges, attorneys and officers of every court are sworn in the name of God to do their duty. Every witness before he is permitted to testify must hold up his hand and swear before God to tell the truth, the whole truth, and nothing but the truth. When any doubt exists as to a witness comprehending the nature of an oath, the judges give solemn warning that false testimony will not only incur the penalty of violating human law, but will receive certain punishment in the world to come. Lawyers are also believers in the mediation of Christ, because they can appreciate in all its fullness the divinity of the law which accepts repentance and belief as full atonement for its violation.' Sir William Blackstone declares, "The belief of a future state of rewards and punishments, the entertaining of just ideas of the main attributes of a supreme being, and a firm persuasion that he superintends and will finally compensate every action in human life, all of which are revealed in the doctrines of our Saviour Christ; they are the grand foundation of all judicial oaths, all moral evidences. Therefore all confidence in human veracity must be weakened by apostasy and overthrown by total infidelity. Wherefore

all affronts to Christianity or endeavors to depreciate its efficacy are highly deserving of censure."

Judge Cooley, of Michigan, one of the greatest lawyers America has ever produced, bore this testimony: "I regard Jesus of Nazareth as having done more to advance civilization, and to influence beneficially the history of the world than any other historic character. The teachings of Jesus Christ I think constitute a book more important to the world, and more influential in reforming and improving the condition of mankind than any other." William M. Everts says: "The great mass of our countrymen to-day find in our Bible,—the Bible in their worship, the Bible in their schools, the Bible in their households—the sufficient lessons of the fear of God and the love of Christ which makes them obedient to the constitution of their country."

James Kent, author of Kent's Commentaries, says: "The Bible unfolds the origin and deep foundation of depravity and guilt, and the means and hopes of salvation through the mediation of our Redeemer."

Macaulay, the historian, with his great logical and legal acumen, says: "The real security of Christianity is to be found in its benevolent morality; its exquisite adaptation to the human heart; in the facility with which its scheme accommodates itself to the capacity of every human intellect; in the consolation which it bears to the house of mourning; in the light with which it brightens the great mystery of the grave." Sir Isaac Newton said: "We count the scriptures of God to be the most sublime philosophy."

Professor Swing says: "The metaphysicians may secretly regret that the Nazarene did not discourse like a Plato or a Locke. The poet may wish that he had said more about land, sea and sky, about opening springtime or the falling leaf. Devotees of science may feel at times that the 'Cosmos' of Humboldt surpasses the simple story of the gospels. But these longings and complaints are only the result of nar-

row specializations. Christ spoke for the whole world. Our wishes are the style of time, his manner the style of eternity.

"He was the revelation of a code of morals that makes the sages of old hang their heads in humility. He did not, like Seneca, teach virtue without being virtuous; nor was he content by being worse than the best, but better than the worst. All compromising, all comparative goodness terminated at Nazareth. A sinful thought became a stain upon the soul, and the enmity that said 'Thou fool' became a confessed ruin or sorrow in the heart.

"Above all superhuman beings he stands farthest from myth and nearer to reality. The Christian poet cannot say with the classic 'All I know of thee is thy name,' and they who erect an altar to him cannot write over it 'To the unknown God.' His reality is as definite and undeniable as the reality of Washington or Franklin. All other incarnations belong to the atmosphere of legend. No twelve disciples gathered daily around the feet of Olympian Jove, or the beautiful Apollo, or the gifted Minerva. No multitude gathered upon the mountain-side to hear and see Hercules and Aphrodite. Had some crowd followed the Apollo along the streets of Jerusalem or Athens, and had even crucified him then would the Christian Gospel confess a rival in the pagan pages. But it was the misfortune of all the Olympian group that there was no Judas to betray them with a kiss, and no Pilate to order them to the cross. They all lived outside the bounds of evidence."

CHAPTER XX.

THEOSOPHY, CHRISTIAN SCIENCE—ETHICAL AND ELECTRIC.

It is said, "Theosophy is essentially scientific, and theosophists are gathering data and statistics that will form the basis of a psychic science, that one day may become absolute." It claims to cover the ground of both material and soul science, and aims to correct the evils of the world through the individual by teaching him the great laws of cause and effect and preparing him for self-government. It says, "You cannot break a natural law, in case of collision the law will break you." It teaches a oneness of all things, and the religion of brotherhood.

This is good foundation truth and acceptable, as far as it goes; but the doctrine of reincarnation seems to be the basic fact upon which the tenets of theosophy are founded and this is not acceptable. According to this theory death is simply a suspension of the ego or soul, during which period it is deprived of a material form through which to manifest itself.

After a certain time the soul or ego, or consciousness, becomes reincarnated in another earthly body. Therefore, the life we lead to-day, determines what body we shall take in the future. That is, we will gravitate to conditions analogous to our own state at death. In other words the good individual will be attracted to the body of a child of parents whose instincts correspond to its own, while the bad soul will also seek its kind.

This is the theosophical idea of heredity, and explanation of the born criminal. They carry material laws into the psychic or spiritual realm. This they claim is in accord with the latest beliefs and discoveries in science.

They believe not only in physical evolution, but in spiritual evolution. With them Karma is simply the great law of action and reaction,—the equilibrium of the universe.

They believe in an astral body, the effect of mind upon mind, and thought transference. According to their theory, the astral body fills the material body, as water does a sponge; as water may be evaporated from the sponge so the astral may be detached from the material body.

Thus an adept may send his astral body to any distance and recall it at any time. The astral body as they affirm being "that mysterious part of us which can stand away from itself as it were, and say "I am I." "What am I, and what are you? We are one existence and yet we are dual." Theosophy teaches thought transference, that thought is material, that as it passes from the mind it takes definite form and impresses itself permanently on the medium that conveys it. This medium is what scientists call ether in which the Roentgen rays, and other wonderful things are found. Every thought is thus indestructible and goes to forming a perfect record of terrestrial existence, so that by the vibration of this ether the whole history of the world could be reconstructed, since everything photographs itself within the ether that surrounds it, so that all things speak as it were, and even "the walls have ears." The effect of mind upon mind they deem a very wonderful influence, and most important to be considered, so much so that as one writer expressed it, "A man may think another man to hell." They oppose capital punishment because they believe the criminal is influenced by hereditary and other tendencies which he cannot control. Their charity covers a multitude of faults, they do not treat the prostitute as a degraded creature, but tell her she has fallen through ignorance of certain great laws, and endeavor to teach her those laws and the necessity of self-government.

I have much praise for Christian science and no unkind things to say of it. I glory in the good it has done for delicate, nervous women, and feeble, discouraged men and I bid it Godspeed in its noble mission of teaching the wonderful influence of mind over body, of faith over despondency, and of holiness and purity, and prayer and reliance on the divine mind over the health and happiness of suffering humanity.

I say it gladly, and without fear of successful contradiction that the true Christian scientist is the most holy, prayerful, trustful Christian in all Christendom, and the only great fault is their excessive faith and trustfulness.

Think of it, so great is their faith, that they believe that all things are spirit or divine mind, that matter does not exist, but is an illusion of mortal mind, that life, love, and truth, are all that is real; that sickness, sin and death are unreal and do not exist, except as an illusion of mortal mind or imagination; that they can demonstrate their religion as Christ did his by curing themselves, and healing the sick and the afflicted as he did, and by the same means relying only on prayer and faith and the divine mind,—and discarding all medicines or material things. They claim to have the same power that Christ had in healing the sick and the afflicted, which seems an ungodly presumption.

This to my mind is too much faith in themselves, and what they call the divine mind, and through this excessive faith in invisible and spiritual forces, they neglect medicine and all material remedies, and thereby needlessly cause the death of many of their believers. Their treatment of little children and invalids often seems cruel, inhuman, and murderous as they undertake to prove by demonstration that the power of mind can destroy disease, and thus neglect all remedial agencies to effect a cure. And as they contend there is no such thing as death, they seem to have no compunctions of conscience over their neglect, or the loss of

their friends. They are spiritualists of the extreme type, not the kind that believe in table rapping, but who believe they can treat and cure by mind or spirit persons who are a thousand miles from them.

The mind cure rests upon the supposition that all diseased states of the body are due to abnormal or unhealthy conditions of the mind, which can be cured by the direct action of the mind of the healer upon the mind of the patient.

The Christian science method of healing rests upon the assumption of the unreality of matter. This assumed as a fact, it follows that our bodies are unreal, and there is no such thing as disease, but disease, sin and death are delusions existing only in the mind, which is the only real thing in existence.

Spiritism is based on the supposed interposition of spirits of the dead operating directly or indirectly through a medium upon the patient.

Christian science is based upon the assumption that matter has no real existence, consequently we have no bodies, and hence no disease of the body is possible. Says Hudson in his *Laws of Psychic Phenomena*: "It is not known whether the worthy lady founder of the school ever stopped to reduce her foundation principle to the form of a syllogism. It is presumed not, for otherwise their intense, monumental and aggressive absurdity would have become as apparent to her as it is to others.

" 'Let us see how they look in the form of a syllogism:—Matter has no existence. Our bodies are composed of matter. Therefore our bodies have no existence. It follows of course that disease cannot exist in a non-existent body.' Of course no serious argument can be adduced against such a self-evident absurdity."

He says further, "Yet it numbers its followers by the thousand, and the cures it effects by its practitioners, are

remarkable and of daily occurrence, showing that any system of belief if earnestly advocated will find plenty of followers, and that subjective faith is a necessary factor in the cure of disease by psychic process. No greater demand could be made upon the resources of our credulity than to tell us that all that is visible or tangible to our objective senses has no real existence. Yet that is what the patient of Christian science is invited to believe as condition precedent to his recovery. Of course he feels at first that his intelligence is insulted, and he protests against such a palpable absurdity. But he is quieted with soothing words, and is told to get himself in a perfectly passive condition, and say nothing, and think of nothing. After a seance of this kind lasting perhaps half an hour, the patient finds immense relief, and the healer triumphantly asks, 'what do you think of my theory now?' It is little use for him to reply that he does not see that the theory is necessarily correct because he was benefited. Or to remember that mesmerist, hypnotist, and spiritist do the same thing in almost a similar manner, and that if he would sit down at home any time with a friend and get his mind and body in a state of passivity, with the magnetism of another personality to assist him, he would experience the same restfulness and relief without the attendant, unreasoning absurdities."

Christian scientists are far in advance of the mesmerists, hypnotists, spiritists and all other mind healers, for they teach their patients how to help themselves, form them into classes, deliver lectures and give instruction. They do much good, and little harm except in overconfidence in their methods.

I cannot accept the doctrine of Christian science, that matter is unreal and a delusion of the mind; or that sickness, disease, sin and death are a delusion which can be cured by belief in their non-existence. Matter is changeable, but while it is a part of our bodies it is often a fearful

and painful reality, while disease and death are too tragic for delusions.

I cannot accept the theosophical teaching of reincarnation. If there ever was reincarnation it was before the soul attained to consciousness or self-consciousness. If the soul of man came up from the lowest forms of vegetable and animal life which I do not believe, then there might have been reincarnation until the soul was developed to absolute self-consciousness in man. Then of necessity it would cease, for its self-consciousness would prevent reincarnation and it would pass on to another world of destiny and usefulness.

As to the law of Karma or ethical causation, which is the ultimate law of cause and effect, it is the same as the Christian doctrine "whatsoever a man soweth, that shall he also reap." This applies to nations as well as to individuals, and Mr. James Albert Clark's theosophical explanation of the decadence of Spain is simply that of cause and effect. He says "Spain's woes were Spanish in creation. The life atoms in her history have obeyed the law of all cosmic and human evolution. Her advantages in early history even as Iberians were favorable, the Phœnicians brought her schoolmasters, the Carthagenians military discipline, the Greeks founded cities, the Romans brought law and majestic bearing, the Jews helped, the Arabs brought guilds of labor and economic habits; and Latin Christendom up to a certain date brought much that was valuable; and her ten universities were the best in Europe. With all these advantages she has dwindled to a corporate mass of the fourth monastic plain and is reaping exactly that which she has sown. The unpurged fragments of her past dark record are reincarnating to make her more cruel, while the groans from all the burning stakes of the inquisition under the ultimate law of laws in every human vortex are now breathing on her soil—'each man's life is the outcome of his former living.'"

Marie Corelli in a Romance of Two Worlds puts forth a vague conception of what she calls the "Electric Principle of Christianity" which may contain many grains of truth. She declares God is the Supreme Spirit of Light, he is a shape of pure electric radiance, that all the miracles, visions and appearances of deity chronicled in the Scriptures were electric in character. "As a poet forms poems, or a musician melodies, so," she declares, "God formed by a thought the vast central sphere in which he dwells and peopled it with the pure creations of his glorious fancy. Being pure light, he is also pure love. The necessity of loving points to the existence of things to be loved—hence the secret of creation. From this divine love proceeded the electric circle of the universe, from whence are born all worlds."

That he gave man superiority by placing within him his "likeness" in the form of "an *electric flame* or *germ* of spiritual existence, combined with its companion working-force of will-power."

She says, "this earth and God's world were like Europe and America before the Atlantic cable was laid. Now messages of good-will flash under the waves heedless of the storms. So also God's cable is laid between us and heaven in the person of Christ, and he has established a broad stream of sympathetic electric communication between those who seek electric attraction and himself. God has pity because he finds a portion of himself in all pure souls that love him, and *he cannot despise himself*." She says further, "Christ's death was not a sacrifice, because God did not need a sacrifice, it was simply a means of confidence and communion with the creator. And he established that much-needed electric communion between us and the central sphere."

She affirms that the New Testament proves that Christ was an embodied Electric Spirit. That his career was at-

tended by *electric phenomena*, first, as the star and vision of angels at his birth; second, when baptized and the heavens opened and an electric figure like a dove descended upon him; third, in selecting his disciples at a word they rose and followed him; fourth, his body was charged with electricity by which he healed the sick by a touch or look; fifth, walking on the sea was a purely electric effort; sixth, the death of Christ was attended by electric manifestations of darkness, earthquake, and rending the vail of the temple; seventh, the resurrection was a most powerful display of electric force; and eighth, the descent of the Holy Ghost, which was an ever-flowing current purely electric in character, as well as "the cloven tongues like as of fire!" She says "granting human electricity to exist, why should not a communication be established like a sort of spiritual Atlantic cable between man and the beings of other spheres, and other solar systems?" She also has her heroine to take an imaginary trip through vast electric circles of brilliancy up to the grand electric, creative central circle of the universe. Her theory is ingenious and plausible, and reasoning from analogy it may be that electricity effects spirit as it does matter, and is its medium of transportation.

Wherever she attributes material phenomena to electricity such as the appearance of the star, the descending of the dove, the open heavens, the walking on the water, the healing of the sick, and the resurrection, she is right, they were all due to electrical energy controlled by Christ or the Divine Mind. As I have before stated all physical manifestations are caused by electricity, and there is no other force or power in the physical universe. But this force is dominated and controlled by the spirit of God and man, and spirit may operate on spirit without the aid of electricity. But whether there is an electric element in pure spirit, and whether it is carried by its own inherent

force and will, or borne over the universe on an electric sunbeam or flash of light is a matter of pure speculation and is immaterial.

Ethical science is already perfect and complete, and is waiting for physical science to attain the same perfection; not with single and independent facts, but with systems of facts and their relations to each other, and to all things which constitutes the sovereignty of law. Henry Drummond says, "With Copernicus, Galileo and Kepler the first regular lines of the universe began to be discerned. When nature yielded to Newton her great secret, gravitation was felt to be not greater as a fact in itself than as a revelation that law was fact. In these natural laws one stands face to face with truth, solid and unchangeable. Law is still the largest, richest, and surest source of human knowledge. That the phenomena of the spiritual world are in analogy with the natural world requires no re-statement. The world is not divided into two, a cosmos and a chaos, the higher being the chaos. We must not talk of the supernatural as an unintelligible world where the reign of mystery supersedes the reign of law. Spiritual laws and natural laws are the same, they deal with matter at one end and spirit at the other.

Swedenborg says, "The physical world is purely symbolical of the spiritual world." Carlyle says, "All visible things are emblems. Matter exists only spiritually and to represent some idea and body it forth." Milton says, "What if earth be but the shadow of heaven?"

And the New Testament says, "The invisible things of God from the creation of the world are clearly seen, being understood by the things that are made."

So the spiritual world becomes slowly natural, and the natural world becomes slowly spiritual. It is a working model of the spiritual—the same wheels revolve but without the iron; the same figures flit across the stage, the

same processes of growth go on, only with a different quality of life. But room is still left for mystery. A science without mystery is unknown; a religion without mystery is absurd. This mystery is also scientific; is a necessity to finite comprehension. If we could understand all the mysteries of science and religion we would be infinite, and as wise as God himself.


Out of infinite complexity rises infinite simplicity which foreshadows a final unity. This unity and continuity is the heart-secret of creation, the prophecy of spiritual evolution and Christian redemption.

"No single fact in science has ever discredited a fact in religion," says Drummond. "If the purification of religion comes from science, the purification of science in a deeper sense shall come from religion. And theology must draw upon the further revelation of the seen for the further revelation of the unseen. It need and can add nothing to fact; but as the vision of Newton rested on a clearer and richer world than that of Plato, so we may see all things in a clearer and richer light. After the work of centuries the mental eye is a finer instrument and demands a more orderly world. Had the revelation of law been given sooner it had been unintelligible. Revelation never volunteers anything that man could discover for himself." We may add, only when he is capable of discovering it is he capable of appreciating it. Besides children do not need law except in the sense of commandments; they repose simply on authority. But there comes a time when the world reaches its manhood, and will ask questions, and stake everything on the answers. The protoplasm in man which is a clear jelly-like substance resembling the white of an egg, composed of carbon, hydrogen, oxygen and nitrogen, which is the structural unit of all living bodies has more than instinct and habit, it has a capacity for God. It grows into a dream of heaven.

If nature be a harmony, man in all his relations—physical, mental, moral and spiritual—is included within its circle of unity. It is altogether unlikely that man, spiritual, will be violently separated in all the conditions of growth development, and life from man physical. Nature as a whole is not to be spoiled by its own refinements. Growth, development, evolution, found in so many sciences, is doubtless a universal principle and applies to all spiritual as well as natural law.

The author of *Unseen Universe*, says, "Assuming the existence of a Supreme Governor of the universe, the principle of continuity is the expression of our trust that he will not put us to permanent intellectual confusion." Or as expressed elsewhere continuity is the expression of "the divine veracity in nature." Thus by continuity we expect gravitation or electro-magnetism to prevail throughout the universe; and we find wherever matter is detected in sun or stars, this is the case. The structure of our bodies conform to this law, and it would make us at home in any part of the universe, and shows its all-embracing unity.

The same universality may be predicated likewise for the law of life. Where there is life we may expect to find it arranged, ordered, governed according to the same law. At the beginning of the natural life we find that natural life can only come from preëxisting natural life; and that spiritual life can only come from preëxisting spiritual life. But this is not two laws but one. At one end the law is dealing with matter, at the other with spirit. Therefore the laws of the natural life must be those of the spiritual life. There may be higher laws,—such as the law of laws—the law of Love. The seeing of spiritual truths mirrored in the face of nature rests not on any fancied but on a real analogy between the natural and the spiritual world, and are in some sense counterparts one of the other. Science cannot say what spiritual life is. It cannot even define



natural life, which is still the greatest of mysteries. Spiritual life is not a force, but a deathless tenant in the soul. Mind and brain are related, but they are not identical. Consciousness may continue without the material body. Soul is a living organism.

One would suppose the lower or physical world was formed first as a kind of scaffolding on which the higher and spiritual should be afterward raised. But the exactly opposite is true. The first in the field was the spiritual world, and by it were woven through electric action all the forms, beautiful and complex of material creation.

"After all the true greatness of law lies in its vision of the unseen. Law in the visible is the invisible in the visible." In its wider sense law is essentially spiritual. Indeed they tell us "Matter is the less important half of the universe." This seems paradoxical, yet even Mr. Huxley assures us with Descartes, "that we know more of mind than we do of body; that the immaterial world is a firmer reality than the material." So vast is the invisible matter and the invisible electric forces in nature, that philosophy does well in proving that by reason of its rapid imponderable changes, that matter is virtually a nonentity; and that God created all things out of invisible, imponderable nothings. The visible is the ladder to the invisible, the temporal is the framework and scaffolding of the eternal. God is the eternal, and to know God is eternal life. God is love and true love is immortal.

Modern science knows only two kingdoms or worlds, the organic and the inorganic; but there is another, the spiritual kingdom, or the kingdom of God. The environment or source of life in the spiritual world or kingdom is God.

In the organism lies the principles of life; in the environment are the conditions of life. Over seventy per cent. of the human body is water, the rest gases and earths. The pores of the skin in a healthy adult exhale daily two

pounds of water ; all are furnished and kept up by environment. In burning coal the oxygen in the air assists combustion. Spiritual environment is God ;—is communion with the eternal spirit of light and life. Without this environment the soul is as the carbon without the oxygen, the fish without the water, the animal organism without the atmosphere. *God is our refuge and strength.* Communion with God therefore is a *scientific necessity*. Man in his spirit life may have unbroken access to Infinite power. He may be more than self-luminous, for the Bible says "The Lord God is a *sun*." The soul finds its life in God, just as all natural things are complete in nature. The alternatives of an intellectual life are two, Christianity or agnosticism, spirituality or pessimism. The problems of the heart and conscience are infinitely perplexing. Has love no future ? Has right no triumph ? Has this life no hereafter where love is reunited, where hope is satisfied, where self is completed, and justice and truth made manifest ? *Men will worship*,—an altar of some sort they must have—God, or nature, or law. They will deify dust, or chisel a marble God, or adore fire, water, sun, and stars. But worship they *must*, it is their nature, and the necessity of their helplessness. "Learn of me and ye shall find *rest*," says Christ ; "learn of me and ye shall find *restlessness*," says the philosopher and the scientist. How long will it take men to learn there is rest only in their spiritual nature, which is obtained by rest in God ? How long will it take science to believe its own creed that the material universe is only a fragment of the universe we do not see ? Take the ovule of the worm, eagle, elephant, man, and the most skilled observer cannot distinguish one from the other. Take the vegetable and animal, the oak and palm, worm and man all start in life together. The protoplasm which is the structural unit of all living bodies is alike. Huxley says "It is the basis of all life. It is the clay of the potter. Beast and fowl, rep-

tile and fish are all composed of structural units of the same character, namely masses of protoplasm with a nucleus." What then makes the difference between the apple that fell in Newton's garden, Newton himself and his dog? The protoplasm in man has something more than the animal and vegetable protoplasm, it has capacity for God and spiritual growth.

Religion is as natural to man as water to a fish, or atmosphere to animal life. And all men in all ages have recognized their helplessness and worshipped a superior being, or trusted in a superior power.

Theism is the easiest of all religions to get, but the most difficult to keep. Socrates and Aristotle, Cicero and Epictetus had a theistic religion; Greece and Rome had none. Theism has always fallen into the wildest polytheism, or the blankest atheism. It is a historical fact that outside of revelation man has never obtained such a knowledge of God as a responsible and religious being he requires.

The wisdom of the heathen world at its best was utterly inadequate to create an abhorrence of sin, control of the passions, purity of heart, and ennobling conduct.

Drummond says "What history testifies to is, first partial, and then total eclipse of virtue that follows the abandonment of belief in a personal God. Grant that morals have their own base in human life, and nature has a religion whose creed is science; there is nothing a part from God to save the world from moral death. Morality has power to dictate but none to move; nature directs but cannot control."

Martineau says "to believe in an ever-living and perfect mind, supreme over the universe is to invest moral distinctions with immensity and eternity, and lift them from the stage of human society to the imperishable theatre of all being. Then they help the will with a divine casting-vote in every balance of temptation."

Philosophy ventured to speculate on the being of God, but no source outside of Christianity contributed anything to the doctrine of eternal life. Apart from revelation this great truth was unguaranteed. Says the Bible, "This is life eternal to know thee, the true God, Jesus Christ whom thou hast sent to commune with the father of our spirits, this is eternal life." Socrates said of his soul "You may bury me—if you can catch me." Heraclitus said "Man's character is his fate; and you will not find out the boundaries of soul by traveling in any direction." Theophrastus said "What is, is no more real than what is not; and man is kindled and put out like a light in the nighttime."

Emerson said "God is one and Omnipresent; here or nowhere is the whole fact."

The truth is there is such perfect unity in the universe;—the material and the spiritual world; the invisible and the visible creations are so blended there is but one world and it constitutes but one creative thought in the mind of Deity. And that thought is spirit, matter, electricity,—the everlasting trinity.

CHAPTER XXI.

HOPE AND IMMORTALITY ARE INBORN ASPIRATIONS—TO BE REALIZED HEREAFTER.

HOPE and immortality are inborn aspirations. They are as inherent in man as his soul, or spiritual body ; and they will be realized as surely as God exists. For if God is an eternal spirit, man his spiritual offspring, is an eternal spirit, and will live on through all the æons of eternity. This is taught by all human history, sacred and profane. It is the teachings of the Bible of the Koran, of the Hindo, Zenda Vesta, of the writings of Confucius, of Homer, of Socrates, of Virgil, of Dante, of Milton, of Shakespeare, and of all countries in all ages. Even the Aborigines of America when it was first discovered, taught this same doctrine of a life hereafter and the immortality of the spirit of man after death. They believed in "the happy hunting ground of the great spirit," and at death buried with the dead warrior his horse and dog, and bow and arrows, that they might accompany him in "the happy hunting ground in the land of spirits." They worshipped "the great spirit" as devoutly as Moses, and the Jews, or Zoroaster and Mahomet. This belief in the immortality of man has been the unvarying universal religious belief of all ages and all races, without a single exception as far as I am able to ascertain. It is a part of the universal religion of all humanity. Religion, from the Latin religio to tie to or rebind, means in its broadest sense the rebinding of man to God. And all men have believed they were from God and would be rebound to, or taken back to God. Religion is a broad term, and includes all kinds of doctrines and beliefs concerning man's relations to God,—or the invisible realities.

Any belief in Deity, and man's reunion with him hereafter, is religion in its highest sense.

Man may be called the embodied thought of God. He has powers which proclaim him a part of Deity. He partakes of the nature and attributes of the divine mind. His powers of perception of the fixed laws of nature, and the spiritual entity of God, demonstrate his kinship to Omnipotence. He is independent of the feeble powers of inductive reasoning when freed from his earthly trammels, and then he sees with the broad grasp of infinite comprehension, and imbibes the spiritual wisdom of the infinite, and ascends to his native realms of truth, and sees "God as he is, and imbibes all truth and knowledge from the fountain head of eternal wisdom."

Christ formulated the doctrine of immortality, and stated the certainty of its attainment. He said, "In my Father's house are many mansions," and he proclaimed that eye hath not seen nor ear heard, nor the heart of man imagined the wonderful things that God had prepared for those who love him. He stated the conditions on which eternal life was obtainable, and that condition was *faith, belief*,—belief in God, and heaven and immortality; faith in his eternal justice, wisdom, goodness, and love.

Hudson, in his *Law of Psychic Phenomena*, says, "In formulating the proposition that *belief* is the essential prerequisite to the attainment of immortality, he gave words to a scientific principle. The first proposition of my theory is that death or the practical extinction of the soul as a conscious entity is the necessary result of unbelief in immortality. The second proposition is that the soul having attained immortality through belief is subject to the law of rewards and punishments, 'according to the deed done in the body.'

"Spiritual death is the inevitable result of spiritual unbelief. It is not a vindictive punishment, it is the funda-

mental law of spiritual life. Just as the spirit quickens the flesh so does faith quicken the spirit.

"When therefore Jesus proclaimed the law that belief was a condition precedent to immortal life, he formulated a scientific proposition then new to the world, and at the same time proclaimed himself master of the soul. He had declared the law of faith as it applied to the power of the soul to heal the sick; and he knew that the same law governed the soul in its relations to eternal life. Thus he showed that the man whose soul had not been aroused to a conscious belief in immortality, dies as the brute dieth. His code of ethics was sublime and Godlike in its purity and simplicity, but this was his mission and that mission entitled him to be called the Saviour of the souls of man. His mission as a moral teacher was secondary in importance. One was a scientific fact, the other a code of ethics. The scientific fact was the essential to the attainment of man's ultimate destiny as an immortal entity."

We cannot agree with him in this limited view of Christ's mission, even though it be established by scientific induction. We believe all souls are immortal, and no wickedness or want of faith can annihilate or destroy them, or condemn them to eternal punishment.

When Christ came into the world the doctrine of immortal life held a very vague and uncertain place in the philosophy of civilized mankind. Among the Chinese the doctrine of Confucius held the most prominent place, which system might be called a parent-worship in which virtue was rewarded, and vice punished on earth, no promise of immortality being held out. The sect of Rationalists taught the emanation of all good beings from the bosom of reason, and their absorption thither for an eternal existence, while the bad were doomed to successive births and many sorrows. Another sect held that the principle of all things is but a vacuum—nothing—from which all things have

sprung, and to which all must return. The Hindoo doctrine was the same as now, belief in successive incarnations of the soul, and final absorption in Brahm.

The Persians believed in the doctrine of hell for the wicked, and paradise for the good; but held that all the wicked would eventually be purified by fire.

Heroditus tells us that the Egyptians were the first to defend the doctrine of the immortality of the soul, and they believed in its transmigration through various animal bodies for three thousand years. For this reason we may add they embalmed the bodies of the dead and built the enduring Pyramids that at the end of the three thousand years they might again reënter their bodies.

Of the Grecian school, the Pythagoreans held that the soul is eternal—that is uncreated and indestructible—and that no real entity is either made or destroyed. The Eleatics held practically the same doctrine. The Ionics taught that the soul was reabsorbed into the divine reason. The Stoics believed in the destruction of all things by fire, when the good will be absorbed and the wicked perish. The Epicurean faith as described by Paul was, "Let us eat and drink for to-morrow we die." The Pyrrhonists were the skeptics of the age and doubted everything. Socrates taught the doctrine of immortality for the good, the virtuous and the wise; and that the incurable bad are hurled into Tartarus, whence they never come forth. Plato was a Pythagorean with certain bizarre notions of his own, such as the migration of souls through various brute and human forms, and he believed that even the duration of divine work is limited.

It will thus be seen that when Jesus appeared on earth he found the philosophy of the soul in a very chaotic state. He proclaimed the truth of immortality, and pointed the way to eternal happiness.

The same author says, "The grand simplicity of Christ's

teachings when placed in contrast with the complicated doctrines of all other systems of religious philosophy, ancient or modern, places upon it the stamp of inherent probability; for scientific truth is always simple and free from complications.

"Its influence is not confined to those who believe in the church or even those who have heard the name of Christ. It has spread by some subtle unseen power and potency until it permeates every fiber of human society, and constitutes the promise of every religion, the hope of all humanity.

"It has come to pass that every new fact discovered, and every new principle evolved weakens the foundation of every other religious structure, and adds strength and harmony of proportion to that erected by the man of Nazareth. It may be confidently asserted that Christianity possesses that to which no other system of religion can lay claim; namely a sound scientific basis."

What the human heart desires and human mind seeks is such a God as Jesus characterized, not one merely of intelligence and potentiality, but a God of love and benevolence—a God who sustains the relation of father to all humanity. The emotions of religious worship presupposes the existence of an object of worship capable of reciprocal emotion—it demonstrates the existence of a God of love. It is the connecting link between man and his creator. They prove the fatherhood of God and the brotherhood of man. They show there is nothing satisfying to the human soul until it is in proper relation with God. "Thou hast made us for thyself, and our hearts are restless till they rest in thee."

The Chinese worship Confucius and there is much similarity between the teachings of Confucius and the Christian morals; it fails however to regenerate the empire, because it lacks the sense of duty to God as a foundation and main-spring of duty to man.

To have that sense of duty men must accept the truth that God is one perfect, all-wise, beneficent spirit, to be worshipped in spirit and in truth.

This is why the only hope of higher civilization in Asia depends on the instruction and aid of Western Christian nations.

The western nations have been progressive and steadily advancing, while the east has been retrograding for centuries because the east has been bewildered by the metaphysics of paganism; which says there are many gods, both good and evil, and oft the evil ones baffle the good, and demon spirits possess and control men, who are the helpless victims of cruel fate.

Until the east grasps the spiritual conviction that the supreme power is one God, not many, that he is good and desires man's happiness, and requires of him the practice of virtue and goodness, it must ever continue to revolve in uncertainty and doubt as to providential appointments of good and evil, which render it incapable of a firm advance in knowledge and civilization. The Christian nations are and it is conceded must ever be the model nations of the earth.

It is said Asia has a pantheon of thirty-three millions of gods. This is enough to confuse and neutralize the character and energy of half the world. This with the persistent adhesion of millions to the Pythagorean theory of transmigration of souls—which subverts the relations of man to the brute, and of both to the common creator, together with casts which prevent coöperation, emulation or charity, destroys the equal rights of manhood, and delivers all governments to the caprice of blind fortune or ambition, and the chances of anarchy. Is it any wonder Asia has never been able to organize a civil government, or maintain a beneficial ecclesiastical system, or write a history of themselves, unless we accept such myths and fables as cover millions of years.

Some Americans are saying, "We must look to the east—to India—for religious light." What an absurdity. There is nothing in all that slow-going, black-faced, sad-eyed, impoverished people and country worthy of imitation, unless it is their ability to live on nothing and feed themselves. The Sutee or burning of the widow on the funeral pyre of her husband, the casting of their children into the Sacred Ganges, the prostrating of devotees beneath the crushing wheels of the Juggernaut, these are the expressions in India of religious devotion. Are they worthy of imitation?

The transmigration of human souls into beasts and reptiles, is but little less degrading than their casts. The doctrine that demons or spirits use men as mediums through whom they act, destroys man's individuality and responsibility, subverts the dignity of the soul, and makes it a harp played upon by every wind.

Dr. J. E. Roberts says: "Taught by science man has conquered the forces of nature, and made them his willing slaves. If great Jove were to return to the earth now he would find that the magician Science had filched his dread thunderbolts and put them to better uses than Jove ever dreamed of. Promætheus stole fire from heaven, gave it to man and instructed him in its uses. This angered Zeus, father of gods and men, and he chained Promætheus to a cliff, fed the vultures with his living flesh, then hurled the cliff and the prisoner into the abyss." Jove was as cruel and inexorable as the laws of nature.

In earth and sea and sky the sovereignty of science has been acknowledged, and the freedom and independence of man has been recognized, but if the first man and first woman were to return to earth now, they would find us bending above our dead with the same dread wonder within our hearts, the same unanswered question upon our lips, that they asked and felt when the race was new—"If

a man die, shall he live again?" Within the shadows, death sits upon his ancient throne conquered by none. All wonder, most hope, none know.

We ask as millions before us have asked the age-old question, and to us as to them comes no answer, but the answer of faith,—the trust in the precepts and consolations of religion. Faith in the consoling belief that we will live hereafter, where all things will be made right, somehow, somewhere, to vindicate the eternal justice of God.

"By the side of common ignorance there is also the common hope. Wherever it came, or how, it came with man, and with man abides. No age was early enough to come before that hope arrived, and no age is late enough to ever outlive it. It did not come with civilization; the barbarian was touched with its strange power. In the simplest rude hut of the forest it is present, and the most enlightened people of the world with elaborate rites acknowledge its profound spell. Wherever it came from or how, it came with its impartial benediction, the profound doubter and the one smitten with the wildest grief have strange intimations of a hope—a faith—a trust in the great hereafter.

"When the baby lies in the little white coffin with folded hands, covered with flowers, the mother does not want to be told that 'death is the king of terrors.' She wants to know that it is the great mother into whose arms her baby has come—who hushes it and loves it, and kisses and talks to it in that sweet, meaningless, divine way that motherhood only knows. If then man is ever to know of the life beyond without dying, he will know it not by miraculous revelation, but by supernatural gift of knowledge—he will know it by the development of his own powers and the widening of his own horizon until this side of the grave rises the divine and longed-for fact. Have we a right to know? If it is a fact we have a right to know. You and

I are not responsible for having been born. Had we chosen life and taken chances ending in grave dust, then the responsibility for escaping the grave would have rested upon us. But the infinite ordained the life of which we are the embodiment, and upon him rests the everlasting responsibility of its continuance. Will he continue it? We believe he will, and that every human soul will live on, and exist as long as its creative Deity.

"It is no irreverence for the dying human soul to stand before the august silence, and demand its right of life beyond. If there was to be no immortality, he might have made us as he made the beasts without the power of passion and love, without the wonderful blessedness, and the unutterable tragedy of grief; but having made us capable of being attuned to the celestial melody, he accepted the responsibility of seeing the music drowned and quenched by the noise of the dirt the sexton shovels into the grave. Because man has loved and dreamed, he has more than vindicated his right to live the life beyond. The universe has pledged him that life. No atom in all the vastness of space has ever been destroyed; no promise in nature unfulfilled. Moreover, if there was not to be another life, nature or God had no business to organize into the heart of man the universal dream. He should have left life dreamless and passionless and without hope. It may be that knowledge is to come. That we shall know before the shadows of death compass us, where the eternal spirit shall fly. But it will not come by longing. It will come by preparation and fitness and worthiness to know. If the privilege could be vouchsafed to us,—would any of us dare enter alone a secret place to meet the dead? Are our spirits attuned to that fine response? Are our lives clean and white enough to stand without desecration in that blessed presence? Is there not a price to be paid that none of us have ever paid? Do we think that running here and

there in life's dusty and trampled way we can snatch as we go this secret guarded by heaven? Do we not know that before the heavens open and visions disclose, there is a pathway of pain and suffering, of self-denial and abnegation, of longing and of tears; and then at last upon the mountain heights in some rare and unutterable hour the blessed vision shall come. And when it comes to you, you cannot tell it to me. And when I have seen it with eyes streaming with tears, and with heart hushed to all passion, I cannot tell it to you.

"Each for himself must be prepared, each divinely fitted, each wonderfully blessed. For there are moments for which lips have no language, there are hours whose story never can be told in speech; there are points of the path trod by bleeding feet nearest the border-land beyond, where voices seem to be almost heard in the hushed twilight of eternity."

In the Greek tragedy of "Ion," when he was about to offer up his life on the scaffold, he was permitted to take his last farewell of his beloved Cleomantha. As they separated, she said: "Ion, shall we meet again?" He answered: "I have asked that question of the hills that rise eternal; of the clear streams that flow on forever; of the stars, amid whose azure fields our raised spirits have walked, and in whose lineaments of beauty we have read the love that never dies. Yes, Cleomantha, we shall meet again."

If from a pagan standpoint, the human soul can reason with such unanswerable force and logic, what must be the sweet whisperings of Christian faith? What the pæons of exultant hope and joy?

What is the human soul? I do not know, science does not know. Science says the world and all material things are built of atoms, but no one can see or feel or taste an atom; no human eye ever saw it, and no microscope has ever made visible its intangible, imponderable lineaments. Yet it is the foundation element of the world and all ma-

terial things, and science and all scientific facts and knowledge are built upon it; and science is absolutely as ignorant of the elemental foundation essence of all things, as it is of the human soul.

The subtle force that links the universe together and all things in it in invisible bands of measureless power is called by science—electricity, magnetism, attraction of gravitation,—yet no human eye has ever seen this invisible force; and neither telescope nor microscope can reveal its mystic, unseen presence. Yet its force is measured with the precision of mathematics, and man has made it the plaything of his inventive genius, and marshals its forces in the arena of physics and commerce, as God commands them in the thundering heavens. Science knows nothing of the essential foundation and elements of all material things, how can she tell us of the invisible, reasoning, all-comprehending divinity of mind and soul?

In the coming ages all these things may be found out; for there is no possible limit in time to human knowledge. Some way may be discovered in the coming ages to bring invisible matter and invisible electricity to the visible perception of the human eye and soul. When this is done the next step will not be so difficult—to lay bare the human soul.

My conception of the human soul is an invisible, pure, spiritual body, so like the living, fleshly body which it permeates as to be readily recognized by any friend if it were visible to the human eye. I do not call it an astral body,—a messianic body,—I do not follow the abstruse distinctions of the Hindus or theosophists, who declare there are seven spiritual bodies, one covering the others like the layers of the skin in the human epidermis. I discard all such distinctions as absurd and frivolous. The soul is a perfect unity, a pure spiritual entity and atom of Deity, removed only a few degrees back in the invisible world, from invisible

atoms, and invisible electricity. And as electricity is its servant and agency in the flesh for controlling its physical body and all material substance, so will its quick magnetic force carry it to the bounds of the universe with the speed of lightning. If it travels when released from its habiliments of clay, with the velocity of light it could go round the world a thousand times in a second and a half; and could traverse the distance from the earth to the sun, ninety-two millions of miles, in eight minutes.

As spirit takes no note of time or space, before the body is cold, or the heart ceases entirely to beat, the spiritual body—the soul, may be in the presence of its Creator and Father Spirit—as I conceive in the heavenly ineffable delights of the central luminary of our solar system, the source of all light and growth and life on our revolving earth.

Is it not right by the eternal law of cause and sequence, and unanswerable logic—that life should return to the fountain of life? That life—soul life and material life—which the sun nurtures, builds, and vitalizes here when its usefulness here is ended, that it should return to the luminous bosom of its great mother—the source of all life and light and power; and that there it should find the great spiritual Father that planned and constructed this mighty machinery of worlds—or the Immaculate Christ, his son and representative.

God has a dwelling place in the centre of all power and life and light. Why should we ignore this fact, and dream of him as only a shadow hid in dim eternal mists? He is a reality as real as earth and sun, and sea and land, and far more enduring—he is the eternal verity of life and truth and power. Why make him in our minds a shadow, a fleeting mist, a nonentity, when he is the supreme reality and entity of the universe. The Bible says, “God is the way, the truth, the life, the light.”

God is the way. What way? The way to life—unend-

ing life—all life, unending life in our system of worlds come from the sun. He is the truth—what truth?

Truth is the reality of things. The reality of all things in this world come from the sun. God must be there, for they all come from him. God is the life. What life?

The life of all things real and spiritual, the sun is the life and vital energy of all visible and invisible matter in our world system. It would therefore be the appropriate dwelling place of life-giving Deity. God is the light, now surely if God is the light and the sun is the light they ought to be very nearly related in locality and beneficent effulgence.

Then by all the laws of reason, intelligence, and "the eternal fitness of things," God, the eternal, creative spirit, should have his abode and centre of life and light and power, at the central abode of life and light and power in the physical universe. For such are in accord with his eternal laws, and the one unchanging mode and pattern of the universe.

In all created things wherever exists the moving, controlling, electric centre of power there also is the animal instinct or intelligence; and there also is the human soul or intelligence. So that by universal law, the centre of physical power and life, and electric power and life are also the centre of spiritual and intelligent power, therefore God should make his central throne in the central suns of the universe. And there should be the eternal home, and promised heaven for his faithful saints.

The Egyptians, Babylonians, Persians, and many other ancient nations worshipped the sun as the source of all life. They may have been wiser than they knew. Up to but a few recent years science taught that the sun was a great blazing globe of fire with worlds constantly tumbling into his burning bosom to feed his consuming fires. From such a view one would sooner think of calling it a fiery Tartarus, *the Inferno*, and headquarters of Satan.

Now that science has recently discovered that the light, heat and power of the sun is generated by the friction and resistance of the earth's atmosphere near its surface; and that on the tops of the mountains are perpetual snow and ice even in the tropics, and that the sun's rays give out no heat beyond our atmosphere, or beyond the moderate friction of its own atmosphere, and the sun's surface is adapted to life and is doubtless inhabited, it is reasonable to conclude it is God's abode, and the heaven of redeemed souls. Thus the light, heat and life of the sun is the invisible spirit of God marshalling the hosts of heaven and ever marching on in infinite grandeur and power, to perfect his boundless creation, and the wisdom and happiness of his aspiring creatures.

**"He has sounded forth the trumpet that shall never call retreat;
He is sifting out the hearts of men before his judgment seat;
Oh, be swift, my soul, to answer him—be jubilant, my feet!
Our God is marching on !**

**In the beauty of the lilies, Christ was born across the sea,
With a glory in his bosom that transfigures you and me ;
As he died to make men holy, let us die to make men free,
While God is marching on !"**

CHAPTER XXII.

ALL SOULS ASPIRE AS THEY HAVE OPPORTUNITY TO SUPREME KNOWLEDGE AND HAPPINESS, AND IN THE ULTIMATE AGES WILL ATTAIN TO BOTH.

THE further question arises: Will any soul be lost or everlastingly punished, and banished from God's presence forever? I believe not, and contend that the Bible does not teach everlasting punishment. It does teach just and adequate punishment here and hereafter "according to the deeds done in the body." But that does not mean everlasting punishment, it precludes it; no man in one or a dozen lifetimes could commit enough sins and crimes to justify eternal punishment, "according to the deeds done in the body."

Those who have studied humanity most closely with all its ills and frailties, believe that crime is not so much the result of moral turpitude as of disease, unfortunate environments, temptations and complications. The weakness and ailments of the body, inherited tendency, and overpowering temptation impel many to crime. I do not believe the Almighty will punish such frail, imperfect creatures everlastingly. To believe this would be to question his goodness, perfection and justice, and charge him with a greater crime than it is possible for man or demons to perpetrate. To create beings with inherited ailments and weaknesses full of imperfections, and demand perfection or everlasting punishment is the sublimity of infernalism.

I believe the Bible teaches that the vicarious sufferings of Christ were for the whole world, and that all are saved; and yet all shall be punished according to the deeds done in

the body, here or in some purgatorial existence hereafter. To be punished "according to the deeds done in the body" precludes everlasting punishment, for no crimes could justify unending torture through the infinite cycles of eternity. The scripture teaches that none are perfect, and all are under the condemnation of a perfect law, but this does mean everlasting punishment.

As I understand the fact is the languages of the known earth at the time the Bible was written did not contain a word which meant everlasting or eternal. The ancients had no conception of an unending universe, or thing, or period of time, all things were supposed by them to have an ending. If this is true, then it was simply impossible for the Bible or Christ to have taught or expressed such a doctrine, and our translation does not give the true meaning. The Greek word "æon," translated everlasting means an indefinite period of time fixed by the gods, and does not mean everlasting or eternal.

The world will soon shake off this horrid nightmare of mediæval ignorance and cruelty, "Where the worm dieth not and the fire is not quenched." The lake of burning fire and brimstone, and everlasting punishment belong to that cruel age when men thought they could not be happy unless their enemies were in torture and torment.

But now we must love our enemies and do good to those that persecute us, thus men understand the teachings of Christianity better, and its beneficent ethics lift up humanity, and teaches the common brotherhood of man, and the fatherhood of God. Surely God would not everlastingly punish or destroy a part of himself, an atom of his divine nature. Ultimate universal salvation is the only view consistent with creative goodness and justice. It accords with the vicarious teachings of the New Testament, and the declaration that God is love.

Especially is this true when those beings had no choice

in coming into existence, or the environments of their life, and came with all the frailties of human bodies, and the imperfections of human minds. To require perfection of them, or that they should do or believe certain things, or receive eternal punishment, is not consistent with a God of love, or the tender heart of a loving Christ. And in my opinion the Bible does not teach any such horrible doctrine.

The much abused Colonel Robert Ingersoll makes an unanswerable argument, when he says the Christian's God requires us to forgive our enemies and love them, but he will punish everlastingly his enemies, or those who do not accept his terms of salvation. This is a clear inconsistency, which comes from a misconstruction of the Bible by modern orthodoxy. The cruelty and brutality of the past would not allow a nobler construction of God's character.

With all the harm that Mr. Ingersoll has done with his biting sarcasm and ridicule of the supposed mistakes of Moses, and the follies of so-called Christians, he has done some good, and is entitled to the generous gratitude of humanity for helping to force the Christian world to discard that terrific horror of the past,—a literal hell of burning fire and brimstone. In this he was a world benefactor, and the champion of the truth, and should have the gratitude of all lovers of the truth. For the truth is God's truth, and in this he was God's champion. In talking with him after one of his lectures, a few years ago, he said, "Fifteen years ago I prophesied that in fifteen years from that time no intelligent minister in the United States would preach a literal hell, and my prophecy has come true." This was a grand step toward lifting the shackles of fear and horror from the human mind.

Now if he or others would convince modern orthodoxy that the Bible is consistent, and men will be punished here and hereafter "according to the deeds done in the body,"

and not everlastingly, another great reform would be accomplished.

Fear is degrading to the human soul. It is the slavery of the devil if there ever was a devil, which I do not believe. The devil is the impersonality of all sin, wickedness and crime; an imaginary myth—like Pluto among the Greeks, and Lucifer among the Romans, and Satan, Mephistophiles, Ahriman, and Typhon among other nationalities. They are all summed up under the head of “the temptations of the world, the flesh and the devil,” but the first two includes them all. The temptations of Christ were the conflict in his own soul between worldly power, and fleshly passion, and his divine mission. As it was an evil suggestion, it was customary then, as now, to attribute all inspiration to evil to the imaginary Satan, just as all inspiration to music and poesy was attributed to Apollo and the Muses.

The fact is we get our ideas of hell and Satan from Milton, and he got them from Dante, and Dante got them from Homer; they never came from the Bible, they are not a Christian institution. They are engrafted there from the pagan mythology of Homer’s immortal epics, and have been a part of the literature of the world for three thousand years. No person since then could either speak or write classically and intelligently without treating them as a part of the literary and ideal world. According to Homer hell was in the caverns of the earth, and presided over by Pluto and his furies,—another name for the “devil and his imps.” And there Ulysses visited the dead heroes of the Trojan war.

Dante in his *Inferno* largely followed after the ideas of Homer, and Milton after both, and the literature of all lands is saturated with it. The devil is just as much a myth as Jove, Apollo, Venus, Cupid and the Satyrs. He came from the same source and should long ago have been relegated to oblivion. The world is indebted to the poets

for nearly all the religions of the past, and highest ideals of religion in the present.

One word for humanity, there may have been total depravity in the dark ages of cruelty and barbarism; but modern civilization shows a natural tendency to good where there is fair opportunity, and favorable environments. The wonder is that with the fearful struggle for daily necessities among the poor and unfortunate, the thousand temptations, cares and trials that beset them, that they are as good as they are, and that the criminal class are not more numerous.

If it is impossible for a kind-hearted man to think of the unfortunate classes without feeling his heart bowed with anguish, or visit the grave of an enemy without shedding tears of regret "that he ever warred with such a handful of dust," how can it be possible for the merciful God, and the tender-hearted Jesus, or even the saints, to be happy throughout eternity, and know that millions of human beings are suffering the tortures of the damned. It is impossible. In my judgment only the perversely wicked will be punished hereafter in some purgatorial existence; the great masses of humanity are not perversely wicked and will receive all their punishment in this life. God's punishment is never vindictive, but to purify and reform; and "he chasteneth whom he loveth."

There should be no conflict among Christians, there should be no quarrel between Protestantism and Catholicism. That time is past, each has done his work and has much to do. They should join hands like an elder and a younger brother and march forward against the hosts of infidelity to the evangelization of the world. Here is room for their energies, and they should have no divided purpose. As a Protestant I say, let no one, Protestant or pagan, deny the just debt of gratitude they owe the Roman Catholic Church for stemming the tide of pagan brutality

that prevailed in the early centuries, and preserving through their churches and monasteries the learning and arts of the ancients; and infusing into those ages many of the principles of gentleness and Christianity from which the world has reaped beneficent results.

They were the pioneers, and fought the wild beasts of paganism, cruelty, and ignorance, and helped to blaze away through the dark ages along which Protestantism, Romanism, learning, art and religions, untrammelled by superstition, might pass to the noblest altitudes of peace and happiness. The world is advancing, humanity, civilization and Christianity are advancing, and the souls of men are expanding. And in the coming eternities the souls of men, purified by suffering and made just and perfect, shall attain to supreme knowledge and happiness.

When this perishable frame shall return to dust, there shall come forth a body from "this mortal coil," which shall be ethereal as the light, as warm and glowing as the stars, as intelligent as untrammelled spirit, as swift and quick as the lightning currents of electricity, as joyous as the dreams of heaven, as exultant as the banners of hope waving from the battlements of eternity, as vocal with songs of rejoicing as when the hosts of heaven sang, and "all the sons of God shouted with joy."

With a wing of electric light that never tires, and a thirst for knowledge that is never satisfied, it shall sweep on with the blaze of suns upon its path, and the glowing rush of planets around it. It shall pass over immeasurable reaches of space, where towering constellations scale the heights of eternity, and infinite abysses of starry worlds are swallowed up in depths unfathomable, and before it shall be the life of everlasting ages, full of infinite knowledge, and supreme, unending happiness.

CHAPTER XXIII.

BELIEF IS NECESSARY TO CHARACTER, ART AND PROGRESS.

It is a fact that the masters of art, in all ages, and all countries, have been religious believers. It would not be true to say they were always churchmen, but they were all animated by a belief, a firm religiousness of some kind.

It has been well said "Art in every country has been closely associated with religion." The masterpieces of Ancient Greece, whether of architecture, painting or sculpture, expressed religious thought and feeling. In Egypt, Syria, India and primitive America the art relics are the clue to the religious belief of the races. And down to a comparatively recent date the art of the Celts and Saxons was employed upon sacred subjects. It is true then, to say that art and progress are dependent upon belief—a resignation and trust in the invisible realities. This arouses the conscience, and the awakenings of conscience are the periods of thought, activity, and production in art. No matter what the causes, so long as the belief seems right, and only right, its acceptance arouses the emotions which seek expression in art.

Skepticism and skeptics are not creators. Art requires belief. The artistic must have a purpose, feeling, faith to express. He must be in earnest. He must exult in the triumph of his faith whatever it be. He must be awe-struck at its sublimity. He must feel the passions, pains and perils of mankind, as something more than the mere phenomena of animal life.

Inspiration essential in art comes from the spirit. A wholly bad man could not have chiseled the Venus of Milo, or painted the Last Supper, or erected the cathedral of

Ameius. Neither could a skeptic exercise the genius of a Phidias, or a Praxiteles, a Michael Angelo, or a Raphael, or compose the Divine Comedy of a Dante, the epic of a Homer, a Virgil or a Milton. However good his impulses and his acts, unbelief, skepticism, like a mill-stone about his neck will drag him down, and paralyze his energies. Skepticism produces nothing. It simply tears down. Skepticism of a sort may have its uses. It can restrain, sober, and chasten. In art, it is exercised by the critics who though unquestionably useful, are proverbially the most barren of producers.

The same is true of progress; belief is necessary, for art is progress, and belief is necessary to its growth. Progress is the development of the beauties and utilities in nature for the ennobling and blessing of mankind. Only he who has belief in the hopes and aspirations of men and the existence of their spiritual wants and capabilities, can be stirred by the strong sympathetic impulses, to do them good.

If he looks upon man as a mere animal phenomena, coming from and going to the unknown, by the fateful laws of nature, like an atom floating in the sunbeams,—without purpose or destiny, then his energies will be minimized. He will see men as the blind man in the Bible, who said, "I see men as trees walking." "Believe, and ye shall be saved," "believe, and ye shall have everlasting life," "believe, and it shall be counted to you for righteousness," is the declaration of inspired truth. And both nature and holy writ affirm man, "shows his faith by his works." Therefore faith, belief, is the foundation of all good works, and all good works is progress, art, development, in the highest and the best.

The belief in Christianity helped to make Angelo and Raphael by furnishing them with grand themes. As no lips can be eloquent unless they are speaking in the name of a great truth, so no painter can paint unless some one

brings him a great subject. Belief in heaven and hell made the poet Dante, belief in Christianity made Beatrice. Belief in paradise made the blind John Milton, the heroic deeds of the Greeks in the Trojan war and the belief in mythology made the blind Homer. It is the great theme and the fervent belief that makes the orator, the painter, the poet. Belief in the great theme lifts up the soul and makes it the revealer of a new world. Belief is spiritual heroism, and heroism inspires, and is indeed the beautiful in the soul. It is the old image of God coming to the surface again, as when in scraping off a dingy wall in Florence the workmen came upon the portrait of Dante.

"Every man is a reflector," says Henry Drummond. "In your face you reflect your nationality, character and belief. You cannot help from reflecting—showing the environments in which you live—the influences that have played about you." As Tennyson says, "I am a part of all that I have met." Man's belief is the spiritual energy of achievement. It is like character, which is the real man, and fixes his destiny; it is the active principle of his nature. Characters are achieved—not received. They grow out of the substance of the man's soul. They are shaped into beauty and mature like fruit from the vital fluids of the tree of knowledge and belief. The crown and glory of life is character—the fruit of belief. It is the noblest possession of a man, constituting a rank in itself, and an estate in the general good-will; dignifying every station and exalting every position in society. It exercises a greater power than wealth, and secures all the honor without the jealousies of fame. Froude says, "You cannot dream yourself into a character, you must hammer and forge yourself one." But you cannot do it without belief. Without an affirmative belief a man has no character.

The world is full of the anxious, the weary and the disappointed. Millions are weighed down with the burdens of

life, wrestling in mental conflict, striving for wealth or necessities, or striving to solve the awful mysteries of life, of death, of the soul, of the universe, and to find rest for the troubled spirit. They go too far, work too hard, suffer too much, search too long. Happiness is not in outward things, it is within you—within your own bosom. There you will find it if it is ever found. It is in the faith, trust, peace, hope and dreams of your own immortal spirit.

The frailest flower that blooms, the feeblest blade of grass that grows, the silent cattle on the grassy plain that chew the cud of content, obey the law of their nature—have faith—have faith and rest, and trust. The insect of a summer day, with life brief as a summer's noon, the frail toilers of the sea that give their diminutive bodies to build up the sea-girt isles, complain not of destiny, but ever toil, and sing, and trust.

Then thou, oh! reasoning man learn a lesson from the insect, and the dumb brute, and all restful, cheerful nature. Believe and hope; trust and be strong; trust and be cheerful; trust and be in earnest; trust and wait. Sometime, somehow, somewhere, all things will be made even, to manifest the eternal justice, truth and mercy of the God of love. If you trust in money you will soon be poor, if you trust in health and strength you will soon die; if you trust in the eternal spirit of which you are a living atom you will live on in endless bliss here and hereafter. The little flower that looks up in your face with its smiling beauty for one day and then dies, will tell you more of the grand secret of happiness than all the philosophers the world has ever produced. “Consider the lilies.”

Let us love, let us hope, let us trust,
For we live, it is life, and we must.

Let us dream there's a land where the soul has command
And the heart cannot moulder to dust.

While belief is necessary to art and progress, they owe much to the just critic, and little to the skeptic and the iconoclast.

The public is educated not only by the mere existence of the good works of art, but also by the elucidation of its commentators and critics. Education by absorption is perhaps the most deep-going and far-reaching form of education, because it has the thousand-tongued force of environments; but it has never been found practicable to rely on it solely. In other branches of mental acquisition there is instruction and demonstration, discussion and criticism, then why should art works be relied on solely for the proper development of the art sense. In effect they never are, and cannot be, either in architecture, sculpture, painting or poetry.

Belief, appreciation, is necessary to art and progress in the critic, as well as in the producer; and this belief like an extending wave circle brings others within its benign influence.

How many people really care for great pictures, or perfect statuary. They do not stand in wrapt awe and delight before the immortal works of a Raphael, an Angelo, a Rueben, a Titian or a Canova. They need instruction and aroused admiration.

The same is true of music and poetry. How many people really delight in the soul-stirring melody of music and song, or the uplifting ardor, and ennobling sentiments of poetry. How many people care about poetry, let us say—feel it, are reached by it?

Yet in the language of another, "Can one doubt that if a more loving and careful analysis of such of its products as appear to-day were undertaken by critics competent to convey to an indifferent public the perennial value of its ministrations, some of the unresponsiveness of the average reader would disappear, and some perception of the eternal

significance of the poet's message would extend to the classes now given over to nothing more tonic in the way of reading than the daily newspaper. We say that one is born with the feeling for the enjoyment of poetry and music, another is not. Not so; at least to say this, is not to say all. The feeling for the highest æsthetic enjoyment and appreciation is cultivable, and may be cultivated as any other faculty by studying the material to be enjoyed, and by reverently conning its constituent parts."

A vague, dreamy delight in the presence of some beautiful work of art is not enough, the artistic spirit, the æsthetic rapture of appreciation should be aroused.

This is necessary to the true critic who would arouse appreciation in others, and is especially necessary to produce the atmosphere of interest which stimulates the painter, the musician, the writer to sustained effort, and keeps him true to the pitch.

We love best that which we know best. To rest in loving without knowing is often the merest sentimentality,—a sentimentality to which the Anglo-Saxons have always had a leaning, while it was ever antagonistic to the lucid Greek and Latin spirit. Love is the crown jewel of the soul. Belief, faith is the royal sceptre of spiritual power, character and progress.

CHAPTER XXIV.

THE TRUE OBJECT OF LIFE IS NOT HAPPINESS BUT USEFULNESS.

MAN is largely a creature of environments. Life with him is like a piece of delicate and complicated machinery. It is affected by the touch of surrounding influences, and is more perfect when in harmony with noblest environments and loftiest aspirations.

Life is like a machine more valuable for what it gives forth, than what it receives. The divine edict "It is more blessed to give than to receive," is the colossal and enduring principle of earth's highest beatitudes. The world's toilers and benefactors, and not the rich and selfish climb to the mountain tops of exultant hope and joy.

God has declared "man shall not live by bread alone." He truly lives by wisdom, by knowledge, by the beauties of earth and sky, by the exercise of the divine principles of faith, hope and charity.

This is life,—this is real joy—this is the luxury of existence—to open the eyes on new and beautiful scenes, to open the heart to fresh and noble impulses, to open the soul to grand and sublime inspirations and lofty resolves, and feel that "a noble deed is a step toward God." To gather light and beauty as we sail the sea of life, and treasure it up like bottled sunshine for the dark and stormy days, until the enchanting scenes and beauties of earth are blended with the celestial visions of an infinite and unfading heaven. These are the delights of the good and the noble,—of the world's unselfish toilers and benefactors; but their lofty joys can never be attained by those who are selfish and ignoble.

I love the smiling, laughing, joyous exuberance of youth, when life so far to them has been a stroll through the garden of the world, when its flowers were fresh with the dews of morning, and the lark carols in the dazzling eye of the rising sun, and its melody falls upon the awakening soul like the morning strains of Memnon greeting Aurora, and the sun god. Fair and pure and joyous as the rippling mountain stream kissing the lilies in its laughing speed, and singing to the listening solitudes are the sweet impulses of the fresh noble spirits of youth, as they are blooming into the noble flowers of manhood and womanhood. This joyous, hopeful happiness should continue through life, but how often in a few years is it succeeded by a listless, hopeless ennui, which seems to ask "Is life worth living? I wonder how I can endure this commonplace, everyday world?"

They forget this everyday world is a glorious world, with love for its inspiration, honor and success for its goal, goodness and truth for its guiding star, and the labor that conquers all, and the hope that crowns all for its consummation and final benediction. What a bright, joyous world this everyday world would be if we exercised that exuberant philosophy which says: "Let no flower of the spring-time pass us by. Let us gather roses ere they be withered." When we ask is life worth living? We impugn the wisdom of the Almighty. When we answer in the negative we show ourselves out of harmony with the universe, and like the drifting mariner should study the chart of life's voyage, and ascertain our bearings, looking to faith and hope as the pilots of the soul to the fair fields of heaven, the communion with the father of the spirit.

Do you say that this is beyond the reach of common humanity, that we cannot expect hope and cheerfulness from despairing spirits crushed by misfortunes, and fettered by galling fate. I answer that they are the spirits which

rise and claim companionship with Deity and the universe.

It is the crushed and tried and suffering ones whose heritage is eternal peace and glory.

And there are souls, meek souls and wise
Some in frail bodies of small size,
Some hunchback, bowed, that in God's eyes
Are taller than the red ripe stars.

How can life be just as we make it when a thousand things beyond our control warp and mar it, can we in spite of these maintain a wise philosophy, hopeful, cheerful confidence and serenity of soul and spirit?

Yes, it is our duty to forget all unpleasant things and remember only the beautiful, the cheering and elevating, trusting to the Beneficent Creator to make all things even somewhere, somehow in the unfolding possibilities of the unmeasured future. This trait adopted by humanity, together with the elimination of selfishness and brutality, will produce the glorious evolution of the ages.

A great physician and thinker being asked when he would begin the education of a child, wisely replied: "A hundred years before it is born." Here you have a conception of the millennium, the ultimate perfection and joy of the human race, and the peace and harmony of the world. Not the barbarism and brutality of its early history, but the refined, beautiful, noble and godlike humanity of its perfected existence in the coming millennium when the earth shall be a second heaven.

Above all to be either happy or useful we must be courageous. "To be weak is to be miserable," says Milton, and Burton gives us two guides to happiness: "Be not idle, be not solitary."

Above all be manly, defy the stings and arrows of out-

rageous fortune. Be true as steel and pliable as a damascus blade. A real man should be of such material as to be ground through the flint mills of the gods till fine as powder and come out good as new, a Gibraltar of individuality, an Olympus of unchanging integrity. This is my ideal of a man.

What is man and from whence proceeds his happiness or usefulness? It is from within, for what a man's thoughts are—the man is. And it is from his thoughts, his hopes, his aspirations, the secret inner impulses of the man that flow the perennial streams of happiness. Therefore happiness must be found within our own bosom, it can be obtained nowhere else.

The desire to do good is the foundation of all usefulness, and the propelling, God-given force of benevolence. This also is an internal force, and springs from the human soul. So all souls possess the source of their own happiness.

Our greatest happiness is obtained through usefulness. Doing good to others is the truest, noblest pleasure of life. So that happiness and usefulness are as twin brothers, inseparable in joy and companionship, and the dual, noblest, truest objects of life here, and hereafter.

Love and usefulness give value, beauty and blessedness to life. Love is the celestial charm, and usefulness the earthly anchor that bind us to the hopes and joys of this life, and the gladsome dreams of a present and eternal heaven. Love is the essence and joy of life; usefulness is the fruit of its perfected existence.

Whether life is worth living depends upon the liver. If he gives scope to the best aspirations of his nature, and like the wise mariner ascertains his true bearings in the voyage of life, with truth for his chart, faith for his anchor and compass, and hope for his guiding star, he must finally reach the port of celestial peace.

Who has not said deep down in his conscious reasoning

being: "Love is the one thing that gives value to living. Love is the one thing that makes human life divine. It is the one thing that lifts man above the beasts below, and links him to the angels above. And if it must be that love can only be with pain and grief, with longing and breaking hearts, then I had rather live and love where death is to come, than have eternal life where love is not. I would rather love and be loved, and return at last to nothingness and unremembering dust, than to live in mansions celestial where to the rapt and wondering heart love's sweet story is never told." I would rather dwell in the death-smitten solitude of earth with the warm rays of love's inspiring sunshine, than to sit on the jeweled throne of celestial empires unloved and unloving. Yea, I would rather float in the murky shadows of Dante's *Inferno* like Paola and Francesca, than to be shut up in the cold, calm, motionless light of God's brightest, but unloving heaven. But "God is love," and he never had an unloving heaven, and the more we drink in this divine essence the nearer we approach to Deity, and the beatitudes of his peerless heaven.

Love is the inspiring song of saints and seraphim, the shining ladder of Jacob's dream that resting on earth reaches up to heaven, on which the angels descend, and humanity ascends—the golden pathway of all ministering angels to all worlds of destiny.

Next to the divinity of love, is the blessed nobility of usefulness, the crown prince of charity and good works. Love inspires usefulness, and usefulness inspires love, and both inspire life with its elysian dream of hope and gladness, here, and hereafter.

To love is noble, Godlike, wise,
Who loves not hath no starry skies,
No rainbow spanning storms that rise ;
His nature's warped to strife and wrong.

Love is the beginning of life—real life ; without it all is mere barren existence. Man without love, human and divine love in his soul is a stolid, inert organism of clay, and must sink downward to gloom and darkness, while love and usefulness like the all-blessing sun draws him upward to the altitudes of peace and joy.

Love is the creative agency of all human and animal existence. Even the vegetable world, trees, shrubs and flowers have their dual, sexual amities, and their male and female blending in the love of unity, and the unity of love, and thereby propagate and continue their species in the ever-changing cycles of life.

All that live must come from loving. The positive and negative circles of invisible electric forces, and invisible spiritual forces in man and woman must be broken, and reunited in a combined circle of dual vitalizing growth and power, before God's first command, "be fruitful and multiply and replenish the earth," can be consummated. God has so organized the universe that love brings life, and continues it, while hatred checks all the sweet gushing juices and joys of hope and life, and brings gloom and darkness. Love commands the electric, creative forces of human life, as God commands them, for God is love. And love is the elementary part of God, and the godly part of man. And he whose soul is diffused with love, is enwrapped in the effulgent drapery of divine goodness and joy.

Woman is the ministering angel of love, and is next to God the creator and preserver of the human race.

All that live must come from loving :
In the hallowed name of wife,
God has set the bounds of being,
And the joy of giving life.

The love of the beautiful is ours. God gave it as an angel to redeem the world from chaos ; and as we measure

up to the altitude of gods, so does it seize and possess us. Without it we might as well be the unfeeling sands that strew the parching desert, or a mummy of a thousand years in the crypt of Egyptian pyramids. With it we can sing the morning songs of Memnon and hear the music of the firstborn spheres, and hitch our chariot to the glowing stars.

Beauty is the shining finger prints of Deity upon all the beauteous things of earth, the angel of our sweetest dreams, the empress of our noblest joys. It uplifts the heart, and attunes the soul to the joyous harmony of celestial spheres. It links the spirit to the God of love, for love is beautiful, and is the divine drapery of immortal bliss.

When God said "Let there be light!" beauty answered with a glowing blush the bashful radiance of the crimson dawn.

For the chaos of the ages was when beauty had no name,
And the darkness of creation knew no voice to praise or blame;
Till the eye of God looked on it, and its shadows turned to light,
And behold, the good and beautiful stood only in his sight.

It is said that "To see facts in their relation to all things is to see the beauty and the divineness of this world." The necessity of beauty is upon all things. You cannot look from any window upon the stretch of country at noon, or morning, or twilight, but you see its beauty. The sea is bounded by curves, and covered by crested and scalloped waves. The night is set with jewels from the hand of the Infinite Master. The birds fly never in a straight line alone, but upon a line of beauty always, and the grass, flowers, leaves and opening buds, have the tongueless story of universal beauty. Man, should he come into harmony with himself, with the God within, with the forces about him, would walk this earth comely, ruddy, and robust with health, and upon the plastic pages of his face, Thought, the

deft artist, would carve the line, and put the hues of the inner and the spiritual beauty.

“Build thee more stately mansions, O my soul !
As the swift seasons roll !
Leave the low vaulted past !
Let each new temple nobler than the last
Shut thee from heaven with a dome more vast,
Till thou at length art free,
Leaving thine outgrown shell by life's unresting sea.”

CHAPTER XXV.

THE UNIVERSE IS A VAST ELECTRIC MACHINE.

It will be seen from the preceding chapters that according to my theory of creation the material universe is a *vast electric machine*. That electricity is the right hand of creative power. That it is invisible light, heat, magnetism, gravitation and evolving protean, cosmic energy, constituting it the great chemist, wonder-worker and world-builder of the universe.

The suns and planets are electro-magnets, and their swift motion constitute them electrical machines.

The sun is the great central magnet, and electrical generator of the solar system, the earth and planets are only lesser magnets, receiving their electrical supply from the sun.

The sun is not hot and his rays do not directly heat the earth. The sun only furnishes the earth the electric power to heat itself.

The sun being a vast central magnet and electric machine sends its rays of light and heat energy across the space intervening between him and the planets by wireless currents of electricity that neither warm, nor light this space, and do not manifest any power until they reach the dense electric atmosphere of these planets; then like an electric lamp at the end of two wires oppositely electrified they burst into new-found light and heat and force.

This is the bringing together of the positive electricity of the sun and the negative electricity of the earth,—they meet and produce their life-giving energy only in the dense atmosphere near the earth's surface where it is needed for

animal and vegetable life. This atmosphere is nature's chosen medium where the dual forces of electricity exert their evolving, upbuilding, life-giving energies.

This positive and negative electric force pushing one way, and pulling another like a leather band passing around two cylinders at its opposite ends, causes the earth to revolve on its axis, and at the same time draws and attracts it toward the sun, while the attracting force of its family of planets holds it back, and is the balancing force that keeps it in its orbit.

The sun gives out electric power only as he receives it from his electric field, or sphere of cold dark ether which reaches out on all sides around him to the extent of his solar system, and beyond the orbit of Neptune, being over three thousand millions of miles in diameter.

The earth and planets are also electric batteries or dynamos and give back electric energy to the sun, and the solar system and all the stellar systems of space, and the whole universe is bound together by so many secret invisible electric ties as to be but one mighty electric organism.

The swift flight of the sun and planets, and their rapid revolution on their axis, like the swift revolutions of the cylinder of a dynamo thrash the electricity from the resisting ether of space, and gather and compress it into their atmospheric cushions, and throughout all their substances.

Thus the universe is a vast electric machine creating its own cosmic force, lighting and heating itself from its own electric fires, and bound together by invisible electric bands, pulling and guiding with the swiftness of lightning and the power and wisdom of Omnipotence.

This electrical machinery received its initial impulse of life and motion from creative Deity when all things were in a state of solution and diffused throughout chaotic space. When He said "Let there be light" He impressed the eternal law of evolution, growth and development by elec-

tric energy upon atoms and space until in the sweep of ages they have produced all created things.

And all created things are the result of a supreme creative intelligent will and purpose operating through law, which is the will of Deity, and enforced by electrical power upon all matter.

Thus all matter is controlled by electricity, and electricity is directed and controlled by the intelligent spiritual power of God and man.

I hold there are but three elementary substances or entities in the universe. They are spirit, matter, electricity. From these triune substances are produced all the diversified forms and organisms of nature.

God is a spirit, and all the souls of men are atoms of the one intelligent eternal spirit "in whom we live, move and have our being."

All matter is one matter, and all material substance, things and organisms are composed of the same matter, being myriad aggregations of the same invisible atom. The electrical conditions of temperature, motion, and chemical combinations, constitute the difference in their visible forms and character. The atoms of matter are too minute to be perceived by our senses or the most potent microscope. They must be brought together in clustering myriads before our senses can apprehend them.

Before the birth of creation or material forms the invisible atoms that now constitute all visible things pervaded the immeasurable space of chaotic darkness and silence.

Then all the present visible creation was in a state of solution, dissolved into dark etheric nothingness.

Then, as Moses said, "the earth was without form and void, and darkness was upon the face of the deep." Then "God said Let there be light," and electricity which is the only thing in nature that is instantaneous, came forth in *its* most diffusive form called "light" and brought with it

its other cosmic, protean forces—heat, magnetism, vital force, revolving power, and evolving forms.

The sun had not yet been created, and Moses who seemed to know more than all the scientists, says the sun was not created until the third period. First light, then water, and the gathering together of the firmaments, then the creation of the sun—"the great light to rule the day." This accords with modern science and "the eternal fitness of things."

Then "in the beginning," the creative force came forth at the divine fiat, in lightning flashes and glowing currents of electricity, with force and power, lighting chaotic darkness and gathering the invisible atoms of space into revolving nebula, whirling them into streaming circles of ever thickening matter, and by the law of electric attraction in the course of ages gradually condensing them into suns and worlds.

Thus creative Deity began the work of creation by creating electricity, which is visible and invisible light; or if already created, by starting the electric machinery of the universe in its various manifestations of light, heat, magnetism and force and creating or utilizing the invisible atoms floating through infinite space and darkness.

I hold all ether and space consists of atoms and electricity. That atmosphere is compressed ether, and suns and worlds solidified ether. So there is eternal force and eternal matter coexisting in all invisible space.

All space contains the substance of all worlds, and all worlds the substance of all space, and the raw material was abundant when God spoke the word of creative power.

And when he said "let us make man" he showed there was a dual force necessary to create him as two are necessary to create a third, and the first cause was not a first cause, but a dual causation.

What is electricity, is still unknown, and at present un-

knowable. There are many definitions, but they do not explain it. Science says "it is known only by its effects, which are almost magical." Tesla defines it as "*invisible light*." I know no better definition than that found in sacred writ where its wonderful force and creating, evolving influence is described as the "Word of His power."

I contend that electricity is the medium and agency of creative power in the evolution of the universe.

I hold that "God is a spirit," as the Scriptures proclaim, and that spirit cannot act upon matter; but works by laws, by means, by forces in nature. Electricity is the vast working power of the machinery of creative wisdom.

It impresses his law and intelligent purpose upon all the material universe. It is the connecting, controlling medium between mind and matter, spirit and substance, dust and Deity, God and the universe. All light, heat and force in nature, I contend, is electricity; and that God controls the universe as man controls his body—by electric energy.

Only this mystic invisible force could shoot the earth through space at the rate of a million miles a day—seventy-five times faster than a cannon ball, and fifty times faster than a bullet from a rifle. A cannon ball only travels about two thousand feet in a second, and the swiftest rifle ball less than half a mile; while the earth moves forward in her orbit 18.91 miles at every swing of the pendulum. While at the same time she revolves on her axis at the rate of a thousand miles an hour, twenty times faster than the fastest railroad train.

This electric force not only shoots the suns and planets through space like a swift cannon ball with such incredible velocity, but holds the solar systems and all stellar systems of space in their allotted orbits; and prevents them from flying to pieces, and the movable things on their surface from flying off into space.

After God created electricity, He created great electric

magnets—the suns as the source and depositories of His cosmic power.

The sun systems of worlds are the vast units of creation, with possibilities reaching to the infinities of space and power. An invisible atom is the unit of matter; and the protoplasm the structural unit of material organism; while the soul is the spiritual atom, or unit of spiritual power and intelligence.

All things visible come from the invisible. An invisible atom, an electric force, a wave of light, a magnetic vibration, are elements from which are evolved all the material forms of creation.

It does not detract from the wisdom and power of the Almighty that He should have such wonderful machinery to do His marvelous handiwork. In His infinite wisdom and power, in the economy and simplicity of boundless intelligence, He has made all material things of one matter, controlled by one invisible power, after one unchanging mode, and ever-changeful pattern—the electro-magnet.

All suns and worlds, man and all animal and vegetable organisms, are electro-magnets, or electrical machines.

All things that live and grow, and add to themselves by accretion or assimilation, take their growth and vitality from electricity.

The infinitesimal atom of space, and the primordial cell is a *tiny battery*. All animal and vegetable life and structure from the protoplasm to man, are brought forth under electrical impulse, and obtain their growth and power through electrical energy.

Man in his physical structure is the most perfect electrical machine of animal existence. The brain-throbs and heart-beats of his bodily organism are but the click and hum of the human electric machine. His body is so diffused with electric fire, that he can give forth an electric spark that will kindle a fire, or light the gas; he can even take photo-

graphs from the electricity of his hand, which has been recently done by Adrien Maiewiski, a French scientist.

The boundaries of the universe have been lately discovered according to the eminent astronomer, Simon Newcome. It is in the shape of a great disc or wheel, the milky way being the outline of the wheel seen edgewise, and contains eighteen millions of suns, and over fifty millions of suns and planets. These suns I claim have their immense electric fields of which they are the centre, from which they draw the electric power to attract, light, heat and vitalize the revolving planets and satellites of their sun systems and world systems. These are virtually alike in form, character, substance, and mode of operation, and constitute the *wheels within wheels* of the boundless machinery of the universe. And so profound is the simplicity of nature that their form and motion may be seen in a whirling raindrop, or a falling apple; and the elements of which they are composed are within us and around us, and in every sunbeam, and may be purchased in any ordinary drugstore.

Our sun, the great central magnet and electrical dynamo of the solar system is 1,300,000 times larger than our earth, its diameter is 865,000 miles, being 108 times that of the earth, and it is 745 times larger than all the planets. So vast is its size, that could the earth be placed in the centre of the sun our moon which is 240,000 miles from us would be about half-way to its outer surface.

It has an electric field, or globe of magnetic ether reaching out over three thousand million miles into space from it in every direction, extending beyond the orbit of Neptune. From this ethereal realm of atoms and electricity diffused through this vast void of cold darkness and space, the sun draws his great electric life-giving energy and power.

He only gives as he receives. He only builds into worlds and planets as he is built upon, and replenished from his vast magnetic sphere; thus preserving the law of action and re-

action which are equal, and maintaining the conservation of energy. This law of the conservation of energy has misled our astronomers so that in order to account for the vast supply and loss of light and heat energy in the sun they have erroneously proclaimed it a burning globe.

They could see no way to account for the enormous light and heat supply of the sun unless it was a great blazing, burning globe, an incandescent gaseous sphere, consuming itself, and shrinking its enormous diameter constantly to make up for its loss of power. This was natural until the more recent knowledge of electricity demonstrated its convertibility into light, heat, and vital force, by friction and contact with an opposite electricity. Then it became plain that the heat and light we receive was not in the sun, or from the rays of the sun, but were generated in the atmosphere of the earth by its resistance, and the coming together therein of the opposite electricities of the sun and earth. Then as the earth and planets return to the sun a portion of the electricity supplied, and all the atoms and electricity of the solar system go to and from and return again to the sun like an endless chain, they demonstrate nature's perfect machinery of perpetual motion and power. Thus the scientific shibboleth of the conservation of energy is disposed of without God burning up 18,000,000 of his most brilliant and beautiful spheres, or wasting 100,000,000 times more heat of our sun than is used. There is no waste, or loss of light, heat, and vital energy in the sun or the universe. What is lost in one place is regained in another, and all is used over and over again eternally. Just as the atoms and electricity of our bodies have been used over and over a million of times, and will be to all eternity. Not an atom of matter or a volt of electricity has been destroyed since the universe began. The sun sends his rays by a wireless telegraphy to earth, and Marconi and Tesla in sending electricity without wires simply imitates nature. Their transmitters and re-

ceivers are attuned to each other like the sun and the earth, which send their electric energy from one to the other in perfect harmony and accord.

The suns are the transmitters or oscillators; the planets are the receivers, and each has its electrical affinity in the sun.

Marconi, by wireless telegraphy, has flashed thoughts and signals across the English Channel. And Nicola Tesla proposes to do the same between New York and the Paris Exposition. This can be done by attuning transmitter and receiver to the same tension and affinity; so that like "two hearts that beat as one" they will find each other anywhere in the universe, defying time and space.

By bringing forth light, or electricity, I contend God evoked the creative force of His will, and the "word of His power"; and thereby impressed His law upon nature; lighted, warmed and heated the universe; rounded pebbles and planets; and fed the electric fires of the sun; and evolved all the wonderful, complex forms and organisms of creation.

Only God and electricity could work this stupendous miracle. God by His Omnipotence and wisdom; and electricity as His creative machinery, producing all light, heat, and vitalizing force in nature.

I am not able to agree with the long accepted scientific theory established by La Place and Newton, that our solar system was originally a *heated* mass of nebula, or *fiery* mist, which revolving more and more rapidly, a ring formed on the outer edge which could not keep up with the tremendous speed, and was thrown off and became an independent body, forming a sphere revolving on its own axis. Thus all modern astronomy teaches the planets were formed.

I was inclined to reject the *heat* theory, and so intimated before I read Professor T. J. J. See's, the eminent scientist's,

theory in which he totally rejects the old theory of planet and solar origin.

He holds that in the beginning there was no heat, but a cold so intense that it reached 273 degrees below zero, centigrade—cold enough to make liquid air, and freeze it into ice air. That the sun was a nebulous mass filling all the space now occupied by the solar system—a formless swarm of icy masses floating like some great flock of birds in blue space. That heat began to develop with the compression of the gaseous bodies in response to the law of attraction of gravitation, and which I term electrical attraction. Instead of the sun growing colder it is constantly growing hotter by reason of a steady process of shrinking, and this is the condition that applied for a long time to the stars and planets. Instead then of the earth making its first appearance as a white hot body, it really appeared as a vague mass of gas frightfully cold. As it gradually took to itself form and motion it began to shrink and generate heat. The cold nebula of our globe after taking on motion probably threw off the moon as it had itself been thrown off from the sun. Being comparatively small the earth nebula shrank rapidly and generated heat quickly; but never grew hot enough to vaporize iron. The earth still continues to shrink slowly, and the earthquakes are remnants of its shrinking throes. First, the earth was an intensely cold gas, then it grew hot by compression, and now he thinks it is growing cold again with age.

He says that if the earth had ever been as hot as it is claimed it was, or as many of the planets are supposed to be, all our atmosphere would have been driven off into space, and this would now be an airless world. He says the sun instead of growing colder is growing hotter. Thus does Professor See mercilessly destroy much that science has held dear for many generations. But as they were but uncertain theories founded on supposed reasonable hypoth-

esis of one and two centuries ago, the world and science has lost nothing. But gained immensely by a better and truer conception of the cosmogony of the universe.

I am inclined to believe the extreme *cold* theory is more reasonable and probable, and will prevail over the old accepted extreme *heat* theory. Cold, intense cold, is universal in all space and remains so; while heat is known only on a limited portion of the earth and planets, and the suns. On the earth it exists only between the sixty degrees of north and south latitude and the equator. While electricity with its creative energy comes from the cold dark ether of boundless space; from whence it is drawn by suns and planets.

Intense cold is its home and habitation,—is its positive force and concentrating energy. Cold is contraction centralizing unifying power, heat is diffusion, repulsion and dissolution.

Extremes meet, extreme cold and extreme heat produce similar results. But cold is a billion times more universal than heat, therefore for the universe to begin with extreme cold is a billion times more probable than the present La Place-Newton theory of extreme heat.

The recent discovery of liquid air and its marvelous uses by Charles E. Trippler and others excites vast interests, and tends to prove that the earth, the solar system, and the universe, had their beginning not in the white hot nebula and fiery mists, but in the cold dark atoms and ether of frigid space.

In his wonderful experiments in liquid air he burns carbon like paper, and raw beef immersed in it is taken out hard as marble. It demonstrates its strength in many marvelous ways, and astounds the scientific world. Rubber balls, potatoes and tin dippers immersed in it become brittle and break to pieces like glass or china eggs.

A stick of carbon like those used in the arc light being

partly immersed in a tumbler of liquid air, the part above the surface burned rapidly with a white light as intense as that of an arc light.

This too, when a temperature of 1,000 degrees above zero is required to burn carbon, yet this liquid air at 312 degrees below zero burned it rapidly. A coiled watch-spring immersed in the same glass burned rapidly, and threw off showers of sparks until the entire spring was consumed. Thus extremes meet, and extreme cold produced almost the same results as extreme heat, but in a more wonderful manner.

Alcohol which requires 202 degrees below zero to freeze, by pouring liquid air over it soon froze so that it was broken up into small chunks and passed to the audience, and by it mercury frozen into the shape of a hammer was used to drive a nail into the table.

Liquid air thrown over clothing left them perfectly dry; and thrown on the floor made a heavy sound like melted lead and scattered, throwing off a grey vapor and left the floor dry.

Mr. Trippler says eminent scientists have questioned his statement that he could produce liquid air with liquid air; and with a start of two gallons could go on producing any quantity of the air for any length of time, but he said it was literally true, and was demonstrated daily in his laboratory. He said it was strange these scientists were not surprised when with a few gallons of ammonia a large ice factory was kept in operation. He said he had actually made ten gallons of liquid air in his liquifier by the use of three gallons in his engine, a surplusage that would go on indefinitely.

He claims that liquid air at 312 degrees below zero, being warmed by contact with the atmosphere throws off a vapor which if confined could be made to operate any engine now operated by steam.

He proposes not only to utilize liquid air in the place of water now used in boilers, but also to heat the air with the

natural atmosphere and thus operate engines without either water or fuel.

It is a marvelous discovery, and will likely revolutionize the commercial and industrial systems of the world. It will so cheapen transportation, that with wireless telegraphy, marvelous mechanical inventions and conveniences and concentrated food the whole world will be bound together as one family; and the people and products of all climes will commingle as in one vast market-house and granary. While the great telescopes will front the stars and reveal the mysteries of the heavens, as they have recently done in dissolving the North Star into three stars; one revolving around another, and they two revolving around the third. Thus showing that their distance from us is so enormous that though these stars are millions of miles from each other they seem to be blended as one; and we look at a whole solar system concentrated into one single point of light.

I totally discard the present scientific superstition that the sun is hot, or is a burning gaseous body consuming its immense diameter 380 feet annually, or that it is wasting 100,000,000 more heat than is used; as our astronomers teach. I do not believe that God is burning up eighteen millions of His brightest spheres, if science does say so. This would make Him the champion sun-extinguisher of the universe, instead of the creator and preserver. I do not believe the sun will burn out in five million years and the solar system perish. According to scientific calculation the universe will be consumed in a few million years and nothing be left for God or man to rest upon.

This is a slander on Infinite Wisdom, and a libel on the Architect of the universe. Yet it is taught in all books in our public schools and libraries. I believe in the perpetuity and perfection of creative power, and the eternal abiding existence of the universe.

The sun is only a larger earth, with larger possibilities, and higher and more perennial conditions for human growth and development and with every climate known to our earth except the frigid.

Each planet fixes the supply of light and heat it needs by the resistance of its atmosphere and its own electric attraction; and the sun does the same, and throws off its surplus to the planets.

As the sun does not directly heat the earth, but only furnishes it the electric power to heat itself, this power is not wasted in the cold dark ether of space. Not a cubic inch of space in the 93,000,000 miles between us and the sun is warmed by its rays.

The sun draws from his vast electric field the electric power to supply himself and the planets. The surplus he cannot use is stored in his photosphere which is the outer rim of atmosphere, nature's reservoir for the surplus, and shot by the law of electric repulsion and attraction from there to the planets. The sun has a luminous photosphere all the time because he always has a surplus of electricity. The earth has a partly luminous photosphere only at times and places when its surplus of electricity is thrown off toward the poles which are lit up with the glowing radiance of the *aurora borealis*. The earth's outer rim of atmosphere would be constantly luminous if it were as heavily charged with electricity. The difference is only in degree. The northern lights and *aurora borealis* are the imperfect attempts of the earth at producing a photosphere.

The description of the *aurora borealis*, and the corona of the sun which is the outer part of its photosphere is almost exactly alike. They "consist of luminous arches from which clouds of light stream upward like tongues of fire, while streamers brilliant with hues of crimson, yellow and purple flash upward through the sky." So that the earth's *aurora* and the sun's corona are virtually the same.

That the sun is not hot, that there is no heat in the rays of the sun and that the sun does not directly heat the earth, I could submit a whole volume of argument, but space will not permit, and lengthy argument or detail is not intended herein. But briefly, the sun is not hot; first, because his rays traverse 93,000,000 miles of space between us and the sun which is three hundred degrees colder than ice and do not warm an atom.

Second, because the sun does not melt the snow and ice on the top of the mountains even in the tropics and under the equator where the greatest heat prevails in the valleys below.

Third, because in every 180 feet upward toward the sun there is a loss not only of pressure but of one degree of heat, until 15,000 feet above the equator there is perpetual snow and ice. At forty-five degrees of north and south latitude 6,000 feet above the earth's surface is perpetual cold, and at sixty degrees of north and south latitude there is perpetual ice, snow and cold at the earth's surface, reaching to the poles. Thus only two-thirds of the earth's surface is heated by the sun, the other third is in everlasting cold, snow and ice.

Fourth, because the moon and planets reflect no heat from the sun's rays and if they possessed heat the moon and planets would reflect it, as well as light. The moon especially would flood the earth with mild heat as well as light, but it does not; therefore there can be no heat in the rays of the sun.

Fifth, because the sudden and extreme changes of temperature on the mountains, and all parts of the earth's surface, with the sunshine and without the sunshine, show conclusively the heat is not in the rays of the sun.

Sixth, because heat by the law of its nature is diffusive, and quickly dissipates itself in space, and cannot be shot or forced like a leaden ball through atmosphere or space. And

especially cannot be forced downward from a light ether or rarified air through a dense atmosphere to the earth or planets. There is little or no heat beneath a red-hot stove; and twenty barrels of naphtha burned on a narrow ice gorge made no impression because heat cannot be forced downward through a denser atmosphere.

Seventh, because all the power of Deity could not force or drive an unconfined atom of heat, or billions of them, down from the sun to this earth without reversing all the laws of nature, and especially the law of repulsion or diffusion He has impressed upon heat. It would be not only a miracle but an impossibility.

Eighth, because heat by the law of its nature must be generated where it is needed and used, or it loses itself in space and ceases to exist. For instance the expansive heat that sent heavy cannon balls at the siege of Santiago five miles into the city was dissipated twenty feet from the mouth of the cannon. A red-hot stove loses fifty degrees of heat between five and ten feet from its surface.

Ninth, because heat destroys magnetism and the sun could not be a magnet drawing the earth to its orbit if the sun is 8,000 degrees hot as the astronomers claim. This would make its metals in a liquid state and destroy its magnetism.

Tenth, because heat destroys so-called gravitation and the sun could have little or no attracting power if it is a gaseous burning body consuming itself with heat many times greater than the hottest furnace, and the solar system would go to wreck and ruin.

Eleventh, because sacred writ says God made the sun as a "great light to rule the day." Not a burning ball or furnace to heat the earth or the frigid ether of space.

Twelfth, because electricity is convertible into heat and in nature is only so converted when and where needed, and anything else would be folly and wastefulness which nature never allows.

Heat from sunshine is produced by the contact of an electricity opposed to the sun's rays in nature's medium, the dense atmosphere of earth and planets. And the nearness of three million miles in winter than in summer makes no difference. God or nature can shoot the electric rays of sunshine to the earth (but not heat) 186,000 miles a second and the earth by its opposite electricity and the resistance of its atmosphere can convert them into heat, and force and vital power, where they are needed for man and animal and vegetable life. This is nature's way and there is no other. Only when the sun's electric current has passed through the light thin rarified air of our mountains and met the full force of the earth's electric attraction and the density of our lower atmosphere does the mutual attraction, resistance and friction burst into warm glowing heat, and thrill all animal and vegetable life with new vitality and growth.

The sun spots are openings in its luminous photosphere showing the dark surface of its body. Thus its dark surface is over twenty thousand miles below its photosphere. Down on this dark surface is where its inhabitants walk; for it is reasonable to believe that if the sun is not a burning sphere, it is an inhabited globe. As to its inhabitability we can only reason from analogy, from what we know to what we do not know, and form an hypothesis from "the eternal fitness of things."

First, we know the sun has an abundance of electricity. We know that where there is electricity there must be an abundance of moisture which is necessary for its diffusion. And with electricity and moisture in abundance there must be a magnetic atmosphere. With all these on the sun there must naturally result a soil, and an abundance of vegetation. And where these exist there should be animal organism, and human or angelic beings to crown creative work.

Second, the fact that it is 745 times greater than all the

planets by the law of proportion and fitness it would justify the belief that it is more replete with life and development than all the planets combined.

Third, the fact that it is the electric and physical centre of the solar system should in accordance with all natural law and analogy pertaining to created things, make it also the spiritual and intellectual centre.

Fourth, the fact that it has built up and made this earth and all that is in it, and that it contains the same elements, and the same creative forces are at work there as here, would indicate that only a miracle could prevent it from being inhabited.

Fifth, if Bible declarations are to be considered, it and the suns are the only place that can fill the Bible description of heaven—a place “where there is no need of a sun or moon and where there is no night” and “where one day is as a thousand years, and a thousand years as one day.”

I claim as a scientific deduction the immortality of the soul, with all its inspiring possibilities; and that heaven is a place as well as a condition. That the planets are the hatcheries of human souls and the suns are the places of their perennial development and perfection. That man is a blending of the triune forces of spirit, electricity, and matter; and his soul is an atom of creative deity; and that he alone of all earth's complex organisms is permitted to comprehend nature, and lift the veil that shrouds her mysteries, and submit her phenomena to the test of reason and intelligence.

“We are a part of Thee, O God! and think Thy thoughts after Thee.” I also conclude there is no supernatural, that all things are natural, the spiritual as well as the physical. That God is in man, and in nature, and not above it. That all things are the expression of His Omnipotent will and intelligence. And that all things are “good” as He proclaimed in the beginning. That evil is good misapplied or

out of relation. That mind or soul is the first and last reality, that it and not matter is the real fact of life. That the soul is a spiritual entity distinct and apart from the brain and physical organism; and when free from the habiliments of dust can command electric energy, and soar on electric wings to a perennial existence in the sun or central suns.

That the soul or spiritual body of man is man, and not the temporary vestment of clay; and that it is as indestructible and eternal as his creative deity, and "shall return to the God who gave it," and abide with Him in His eternal dwelling place.

A voice from out the ages spoke
From where the dazzling suns are fed,
"Gird up thy loins go forth in hope,
The living yet shall see their dead."

CHAPTER XXVI.

THE ULTIMATE PURPOSE OF CREATION IS THE DEVELOPMENT OF MAN AND THE UNIVERSE TO IDEAL PERFECTION.

HERBERT SPENCER says all things are the result of "matter and persistent force." I contend that in the ether of space we have both the "matter and persistent force" from which the universe was evolved. That ether is atoms and electricity; atmosphere compressed ether; and suns and planets condensed ether, or atoms and electricity solidified into spheres by the law of electrical motion and attraction. But Herbert Spencer and the materialists ignore the intelligent and moral force back of these which gave the initial impulse, the natural and moral law, and the "sentient plan." They discard the supreme wisdom and power—which is God,—and which gave harmony, law, order and intelligent purpose to creation; or they call him "the first cause, the unknown and unknowable," and rob him of his personality and character. But God cannot be left out of the universal scheme. He is a necessity, the foundation of all persistence and intelligibility in nature. Atoms and electricity have neither hand nor brain, intelligence, reason nor consciousness. They have only chemical affinity, attraction, selection and repulsion. Therefore a supreme intelligent directing power is a scientific necessity, or we have a chaos instead of a cosmos.

Thus, there is the providence of atoms; and there is the destiny of souls. Providence is the result of preordained action or law; destiny the result of character and intelligence. To understand the physics and metaphysics of the

universe we should keep these distinctions in mind. Spirit has life, intelligence and destiny; it controls matter by electric energy, sees and comprehends the universe, and ultimately in the æons of the future shall soar through all the realms of life.

Matter is dead, inert, the plaything and vehicle of electric energy, as words are the vehicle of man's thought and reason. The universe is the expression of God's mind and will.

Matter is sifted in invisible atoms through all space. Shot from the sun, and attracted to the earth by electric energy, and breathed into our bodies scarce eight minutes from that life-giving luminary, and made a part of them, and of all living things; forever renewed and continued in its endless transitions, without thought, feeling or consciousness, through all the cycles of duration. This is the providence of atoms, the preordained law of matter.

But the soul knows no such unreasoning slavery. Hampered for a time by the habiliments of atoms, and in contact with all the elements of creation, in its outer manifestations it is an epitome of the universe; and in its inner consciousness a *reasoning God*. Commanding electricity in its physical organism, when that organism is dissolved, it may command the electric energy of space to bear it to its destiny in the sun, or elsewhere in the universe; where it may grow to perfection in the grand sublimities of life, gathering the unfading flowers of truth, and reveling in the bliss of love and knowledge. This is the destiny of the soul. This is the perpetual development of humanity from ignorance and sensuality, to the perfection of truth, love and spirituality.

Here we are finite, there we shall be infinite. Here there is an Infinite power above us that fixes limitations and bounds that we cannot pass. That directs, controls and will finally judge us, or fix moral laws by which we shall judge ourselves. We cannot escape these limitations, and

this moral law. Good and evil bring their rewards and punishment, and God's moral law is coextensive with his universe.

No man ever put his hand in the fire without burning it, and no man ever lived an evil life without his punishment came sooner or later. It is an axiomatic truth that virtue is its own reward, and "whatsoever a man soweth, that shall he also reap."

Mystery pertains to the finite, and law and its sequence "has its seat in the bosom of God," who is the moral and righteous governor of the universe. If we threw away the Bible and discarded God there would be none the less mysteries. There would be more,—everything would be mystery and unmeaning chaos.

There are many mysteries in the Bible. It is full of oriental figures of speech, extravagant hyperbole, similes, allegories and parables. I believe and accept it as I understand it in the light of modern knowledge. Much of it is history, much philosophy; but its great crowning inspiration of truth and gladness is its perfect system of ethics, its perfect example of the immaculate Christ, and its revelation of God, the human soul and immortality. The story of the Garden of Eden and the fall of man may be a legend or a parable but little understood, for man and the earth were not created perfect in the beginning, but imperfect that they might develop to perfection. This fable or parable was intended to explain the origin of evil, which it does not explain, but suggests its heathen source. It was likely written not by Moses, but by the Jews after their captivity.

The ancients in trying to solve the mystery of evil supposed there were good and evil gods; and divided the powers and attributes of Deity into separate gods representing strength, wisdom, love, hate and revenge, good and evil, vice and virtue. Every ancient nation had its god of good,

and of evil, which was imagined and worshipped before they had any correct knowledge of the physical geography of the earth and heavens. They mistook the volcanic fires of the earth for the abode,—the tophet, hades or hell of Pluto, Lucifer or Satan. The blue sky and golden stars they mistook for the crystal dwelling-place or heaven of the good deities.

They imagined that Satan could come up from his fiery caverns a few miles under the earth's surface, and the immortal gods could come down from their heaven just above the clouds in a few minutes and mix in human conflicts for good or evil. This was the belief of all nations up to a few centuries ago, and every nation had its evil god whom it either feared or worshipped. But modern science has demonstrated that these are impossible absurdities. The Greeks believed in Pluto, the Chinese in Typhon, the Hindo and Persian in Ahriman, the Jews in Satan, the Romans in Lucifer, the Germans in Mephistophiles, and the English in the devil.

In my judgment these all came from the same source—the myths and fables of prehistoric man, and the great epics of Homer, which was the Bible of the ancients. The Jews got their idea of Satan from their Babylonish captivity, and especially from the Persians who returned them to Jerusalem; and who worshipped Ormuzd the god of light and good; and Ahriman the god of darkness and evil. The Bible from that time became saturated with Satan, who permeates all literature even to this day; and all evil is supposed to be inspired by Satan, as all music and poetry by Appollo and the Muses. Even the devout and sublime Milton commenced his most sacred poem by an appeal to the heathen myths—the Muses, to inspire him “to justify the ways of God.”

Satan and hell originated with the heathens, and belongs in the mythology of Pluto, Jupiter and the myth gods of

ancient ideality and ignorance. They complicate and confuse our conceptions of the true God, and mar the wisdom and beneficence of his universe.

When he said of earth and man in the beginning "Behold it is good," I believe he said truly, and saw the evolution and progress of all things toward perfection as the result of his beneficent law.

The mystery of evil is not so difficult to understand when we remember this world was made imperfect that there might be change and progress toward perfection. If God had made man and the world perfect then there could have been no change unless it was for the worse, and there could have been for man no freedom and no moral responsibility. Man would have been an automaton and a puppet, a stereotyped machine of Deity, without intelligent control, or moral independence.

But God is an Infinite, intelligent moral governor. He creates because he is Love, and must have objects for his affection.

The return love of his creatures would be meaningless and stale without free moral intelligent natures. Freedom to do right is no freedom at all. Man must have freedom to do wrong. Then his intelligence and moral nature can discern between good and evil and there is a moral quality and meaning in his choice and action. The law of evolution and man's moral nature will make good finally triumphant. Then evil is but the stepping-stones of human experience toward good. The stumbling blocks and pitfalls along the highway of life teaching us how to walk so as to reach the city of Perfection.

What men call evil, I contend, is but good misapplied, or out of proper relation. For instance Love is good, yet love may be misapplied to unworthy objects, or unworthy ends and becomes evil. Love of money or property is good, because they are necessary to provide for human

wants. But when misapplied becomes covetousness, theft and robbery.

Courage and valor are good, and were esteemed above all things by the ancients, for they are often necessary for the preservation of life, liberty and country. But misapplied they make the evils of war, carnage, brutality and murder. The love of man for woman is natural, inspiring and good. But misapplied, or out of proper relation in marriage, becomes the evil of seduction, fornication, adultery, debauchery and every social vice.

Every good when perverted by man becomes evil, and every virtue in excess, or carried to an extreme becomes a vice—love becomes idolatry; religion bigotry; economy stinginess; liberality prodigality; courage recklessness, and industry slavishness. This being true there is no absolute, but only comparative evil in the world. This is produced by man perverting the good that God has bestowed.

A perfect God could not permit absolute evil. Neither can a God of infinite love and power permit the existence of a devil or hell in his universe to thwart his purpose, or defy his power. Such a God would have limitations, and would be no God; for it would be inconsistent with his infinite goodness and power, and wreck the immaculate wisdom of his universe.

Since modern orthodoxy has wisely eliminated a literal hell, by the same unanswerable logic it has eliminated a real devil. For there can be no real devil without a literal hell, and both should be relegated to the oblivion of the myth gods of past ages.

Man in his old-time cruelty and ignorance, and not God has pronounced against imperfect humanity. "Depart from me into everlasting torments, prepared for the devil and his angels." But Infinite Goodness has never thus spoken to his erring children, but asserted that God is

Love; and mercy and forgiveness are his attributes. The Bible statement that man is under the condemnation of a perfect law, is very different from the damnation of eternal punishment.

Since God requires all men to forgive their enemies, surely he will extend the same mercy and forgiveness to the creatures of his hand. This is required by the perfection of his law, and the necessity of example.

Man is not perversely wicked, nor absolutely bad, nor "Conceived in wickedness and brought forth in iniquity." This is a slander on both God and man.

Most of the evil of the world is the result of disease and ignorance. The greater part of the remainder is not the result of deliberate intent, but committed in the heat of passion; or under great provocation; or in an hour when men are weak and women yielding, when conscience is strangled by a soft caress, and reason kissed to sleep by rosy lips.

In the worst characters are many noble traits, and the most depraved have ideal hopes and aspirations. And it may be true as Charles Dickens says that "God looks leniently upon all vices flowing from tenderness, and human affection." What humanity needs is fair opportunity and favorable environment, and this it shall have in the future here, and hereafter. Then it will bloom into flowers of immortal goodness and beauty.

All religions contend that man was created for God's glory, then I assert, that such glory can only be maintained by the preservation and perfection of every human soul. The loss of *one* would mar the glory and beneficence of his infinite power.

Therefore the ultimate reason for existence is ultimate ideal perfection. Man can only glorify a perfect God by approaching to perfection himself. As God is a spiritual being and a moral governor, man must become spiritual in

his nature, and moral and righteous in his life and conduct.

Truth and goodness are to man like an heiress courted at first for her wealth, but afterward loved for herself alone.

Man is an emanation from Deity and thinks and reasons and has a moral concept like his creator. Reason teaches and says, "all that is real is rational. Where there is motion there is power. Power has design and works toward definite ends. Whatever lives and loves is guided by the spirit of truth and wisdom, which is the spirit of God. The central fact of the universe is the presence of directive intelligence, or active design. Directive intelligent forces at large, is God, in ourselves it is the soul. Life is energy directed by sensibility, and has a meaning only when it is a *moral one*. In the life of righteous endeavor is the end and secret of the universe to be found. Life has a meaning because man thinks, reasons, acts, is responsible and has a living soul." He is responsible because he is a free moral being. He is a free moral being because God is a moral and righteous governor. He exists because the universe needs him, and God is love, and must create moral intelligent beings so that he may have objects for his glory, beneficence and affection.

He did not create man perfect that he might have change, development and freedom, and be led by the spirit of love, which is God, through æons of progression to *ultimate perfection*.

As ideal perfection cannot be obtained here, we are translated to a more perfect perennial abode with favorable environments, where we may walk hand in hand with Deity, and learn the mysteries of the universe.

All life is a poem of glory,
Neither reason nor senses can grasp ;
Till we read every verse in the story,—
And the hand of the Author we clasp.

This is rational Bible religion as I understand it in the light of present knowledge. It does not require the sublime poetry of Milton to explain Satan and eternal punishment, and "justify the ways of God to man." God needs no justification or apology.

Satan and hell never existed except in the imaginations of men. Eternal punishment is the dagger ignorance has thrust into the bleeding heart of suffering humanity. The cruel revengeful spirit of the ancients has pictured the endless tortures they would inflict on their enemies, and ascribed the same relentless fury to their gods.

Like the lake of burning fire and brimstone of the past, to them it was not sufficient that mankind should endure the trials and sorrows of this world, but the eternal tortures of the damned in another world must be pictured to their fearful and anxious souls.

Instead of the horrible picture of a revengeful God, and the eternal damnation of perdition to close the sad tragedies of life, suffering humanity should be pointed to the all-forgiving love of a compassionate heavenly Father, who knows man's frailties, and in his loving care and benediction says :

Ye weary toilers on life's road!
Ye burdened hearts so strong and true—
Patience a step,—death lifts the load,
And angels' wings will come for you.

I accept the religion of Christ in its perfect purity and love to God and man. In his perfect life, and vicarious death, he was an exemplar and redeemer of men. And as in Adam and our early progenitors, all men were dead in ignorance and brutality; so in Christ are all made alive to spirituality, truth and love, and made to know they are heirs of eternal life.

Christ taught a perfect religion, Paul and others taught a theology. I accept Christ's teachings as the sublimity

of truth, and the moral force that shall redeem the world. But the imperfections of men are found in all the schemes of theology. The modern phase of religion is organization against conviction. Organization trying to hold up old convictions that the world has outgrown. They wrangle over "plenary inspiration," Christ's character, baptism and resurrection. Whether he was God, or man, or prophet, his example, his summing up the law and the gospel as love to God and man, together with the golden rule is "plenary inspiration" sufficient to consummate the divine purpose of the ages, the plan of salvation, and bring the millennial reign of peace and joy. His character was perfect, his teachings were perfect. What more could we ask of God or man? These outweigh the universe and constitute a moral force that shall regenerate humanity. Even if his Godhead and resurrection could be disproved his divine and perfect teachings would still be sufficient to redeem the world. And all other questions are of little comparative importance.

As Christ's words were not written down until about one hundred years after they were spoken, it is but reasonable that there should be some inconsistencies. And as he was teaching only divine or moral law, and not physical, it was only natural that in healing the insane he should speak of it in the language of the country and time as "Casting out devils," and of his temptations of the flesh, and of earthly power, as the temptations of Satan, who was supposed to inspire all wickedness.

With this view of the Bible none of its great truths are eliminated; but we are lifted to broader conceptions of Deity and human destiny. It is the treasure house of truth to inspire and ennoble the human race, and shall soon illumine the dark places of the earth; and ere a few brief centuries shall bring the millennium of "peace on earth and good will to men."

Modern knowledge of electricity has killed materialism and buried it too deep for resurrection.

The old materialistic dogma that only what was visible or tangible is real, and all else is myth and superstition, found its Waterloo in the invisible mystic forces of electricity ; and the world advanced to the half-way point between mind and matter, soul and atoms. That advance will never be lost, but in the progress of the ages the last step may be taken and the sacred lineaments of the human soul be made apparent in force and power, as electricity now is.

The coming generations may be able to demonstrate the difference between soul and body, and show they are two separate entities, as easily as the chemist of to-day separates the oxygen and nitrogen in a glass of water ; or the electrician separates the volts of electricity from the atmosphere. They may make such marvelous discoveries that a man in proper condition can see the air filled with spiritual beings as did the seers and prophets of old.

As the heavens are a sealed book until we look through a telescope, and the myriad beings in a drop of water are unseen until we use a microscope, so some genius of the future may discover a means or instrument of electric power that will make visible the mind or soul. The invisible are becoming visible every day. Polaris the North Star has recently become visible as three stars. Lightning and man's skeleton and all physical phenomena of heaven and earth are being made visible and photographed for the inspection of man.

The highway of Truth is long and we have only reached a few milestones on the way. The journey must continue to its destination. We are only in the twilight of the dawn of truth's everlasting day. But the progress of evolution will bring us to its brilliant morn and golden zenith—the perfection of truth and knowledge. If we live long enough and walk far enough we may see and understand all things.

The questions that have puzzled the wisest philosophers, and absorbed the anxious thought of the world will some day be solved and the answer known. Since man stood erect on this planet and contemplated the stars—"the emblazonry of God" his longing soul has sought to unriddle their mystery, and solve the great enigma of the universe. And he shall here, or hereafter.

I have said materialism is dead, but all the scientists have not yet recognized the fact. The latest materialistic work is "Powell's Truth and Error," which contains as I conceive the two greatest possible errors; first, that matter has consciousness; second, that mind is a property of matter. The failure to prove these seem complete and pitiable.

As one of the "leal defenders of the ghost" as he calls the believers in God and soul, I would advise that if *matter* is everything, and he must have *matter*, it would be a more rational concept to speak of physical matter, electric matter, and mind or soul matter.

This is not so unscientific and would save many deceptive and labored postulates.

In the sense that words and thoughts are things, electricity may be refined invisible matter, and soul or mind still more refined invisible matter. And Herbert Spencer's "eternal energy" might be electric matter, and his "first cause," creative matter.

Huxley, the father of materialism, said, "We know more of mind than we do of matter," and Napoleon, the impersonation of physical energy, said "imagination rules the world." Now if our materialistic medicine men would take some of this mind matter and imagination matter and mix with reasoning matter, they might have a valuable compound of *conscious* matter.

As God is rational, all that is real must be rational, and all theories and creeds have served their time and become

obsolete, that cannot stand the test of reason and modern knowledge.

You cannot get moral law or sense out of matter. Yet moral law exists, and is the chief reason for the existence of all things. Therefore there must be something in the universe more than matter. And as matter cannot possess moral qualities, it cannot possess consciousness and the properties of mind.

To wipe out God and soul and mind, and make them a property of matter would be the crowning folly and crime of the universe; the suicide of reason, and the crucifixion of all virtue, love, hope and goodness.

There was a time when inanimate objects were supposed to be alive when men called upon the earth to hearken, the hills to lift up their heads, and the sun, moon and stars to bear witness, as if those masses of matter were endowed with sense and thought.

All the forms of nature primitive man treated precisely as if they had been men, and had consciousness and minds. The plants were dumb creatures, the sun and stars were worshipped as living beings, and they prayed to fruit trees and fountains. This was ancient practical materialism. The fossil fancies of bygone ages; the nursery rhymes of man's infancy; the heritage of thought from the childhood of the race. They were strung into beads of song by the poets, and afterward woven into history, mythology and fable. Their speech and actions were deemed the actual facts of life; and man lived in contact with nature believing all things that moved had minds and bodies kindred to his own.

But mankind outgrew this childhood of ignorance and credulity; all except the modern materialists who would lead us back to our first childhood of delusion and absurdity.

The fadeless jewels of eternal truth and reason are God, the human soul, and immortality. If the Bible taught

only these, with love to God and man and the golden rule, it would contain the essence of all morality and religion, and be the most precious book on earth. But with a perfect example to inspire such teachings, it is the crowning glory, and redeeming force of all the ages.

And materialism and infidelity can never overcome or destroy its eternal truths. Whether the serpent spoke to Eve, or the sun stood still, or the whale swallowed Jonah, or Christ wrought miracles, and was resurrected, are statements of history which may be true or untrue, figurative or mistranslations, without affecting the moral force of the Ten Commandments, or the sermon on the Mount. The moral force is the supreme, sovereign force of the universe, that controls all other forces; and gives the only reason for the existence of all things.

Without moral law all other laws would be meaningless and nugatory. Evolution could not exist without a purpose which must culminate in growth and development to moral and physical perfection. Was it unjust in Deity to wink at man's ignorance, and permit the human miseries of the past? To answer this we must see the end from the beginning.

It is said that half the miseries of the world are imaginary. And I would add that half the remainder is from lack of imagination or ideality.

All men live two lives, the real and the ideal. The real or practical is full of human wants, necessities, trials and tragedies, while the ideal is the inner life, and soul communion, which is buoyant, and rises above all temporal trials, and is full of cheering fancies, bright hopes, and glorious dreams. He who dwells in this ideal realm is above all earthly discouragements; and is carving statues of thought, and painting pictures of beauty to adorn the chambers of an undying fancy.

This does not need to interfere with needful work or

practical energy. It is an aid and help to both, and lifts labor above the weariness of common drudgery. Ideality or imagination is the highest gift of God to man; and was meant to lift him above all petty trials, and give him a telescopic view of the future realms of beauty and perfection in the far-off spheres of destiny.

If a man work in a factory, or down in a coal pit with his hands, he should keep his head among the stars. Ideality is the distinction between genius and mediocrity; between the dull, common human clod, and the bright thoughts and aspirations of a reasoning soul. The man who is without it is "brother to the ox," and like the ox exists simply in the animal state—

To eat, lie down, rise up and feed.

The time will come in the future of our race when selfishness will be regarded as a crime; and the man who lives only for himself, or to gather and hoard wealth as the most despicable and useless animal that exists, and scarcely fit for either earth or heaven.

Perhaps the saddest commentary on life is its brevity, and the certainty of its brevity. This indicates that time is but a training school for eternity. And with all its trials mankind is loathe to part with it; and many feel like good King Peppel when he thought of approaching death; and said, "If I could see God I would kill him, because he makes men die."

This dread and repulsion would cease if as we crossed the dark river to the shadowy shore we knew there was light and life and beauty beyond. And there must be. And soon, scarce ere we are aware we shall have wings and cleave the ambient air that bears us to the sunset hills, and then step on some fair celestial barque and pass away just like a dream to heaven.

Was it cruel in Deity to permit man to climb through

ages of blood and tears from ignorance and sensuality, to truth and spirituality? Surely not more so than for nations to train soldiers in hardships that they may be strong in battle; or for fishermen to cast their children into the water to force them to swim, knowing that their arms are above them to snatch them from all danger. It was the only way to give man freedom, growth and progress. This life is so brief compared with eternity, its trials will soon be forgotten, and man will know with God and the saints how these "work out an exceeding weight of glory."

"Truth forever on the scaffold, wrong forever on the throne,
Yet the scaffold sways the future, and behind the dim unknown
Standeth God within the shadows, keeping watch above his own."

What God and humanity has gained will never be lost. Modern civilization will never go backward or be destroyed like that of Greece and Rome. The same causes that wrought the destruction of their civilization can never again occur. It was the vast hordes of barbarians, Huns, Goths, and Vandals that hurled themselves against Rome for centuries that decimated her best citizens, and discouraged the remainder, and not alone "degeneracy" that caused her fall. This and the cruel conquests of previous ages, have disseminated the idea that nations like individuals have their periods of growth, maturity and decay. This is not true now, even if partly true in the past ages. For now a nation is represented by the masses of its intelligent, patriotic people, then its reigning dynasties stood for the nation, and their degeneracy or fall was deemed the fall of the nation. The general diffusion of education, wealth and freedom, with all modern facilities have changed conditions; England for instance is more vigorous now than any time in 1,500 years of her existence.

The world made greater progress in the nineteenth century than in all the preceding ages. Soon the Russian

Railway from the Baltic to the China sea will be completed, and one can go round the world in thirty-six days, and telegraph around it five times in an hour. In a few decades more one can go round it in twenty days, and telegraph around it every five minutes. Then the nations will be drawn together as one family; and all will combine to beautify and gladden the waste places of the earth; and "make the deserts blossom as a rose;" and the mountains to stand forth as vine-clad columns of beauty. The waters of the Atlantic will be poured into the parched Sahara, and those of the Pacific into the Arabian Desert; and the desert lands will be fructified and populated.

In Europe and America the Atlantic and the Pacific will be joined together by canals and the great lakes and rivers. The Baltic, Black, and Caspian seas, will be connected with the Persian Gulf and the Pacific Ocean. Railroads will traverse all lands, and the hemispheres be linked together by railways from Cape Horn to Behring Strait, and from thence to Gibraltar and the Cape of Good Hope.

There will be stations for wireless telegraphy on seas and oceans. Manual labor will virtually cease; and electricity perform the work of the world; and all men have leisure for mental and moral improvement, and the exercise of the divine principles of faith, charity and love.

In the near future it will be discovered that health is the result of proper electrical conditions; and that disease is the derangement of man's bodily electricity. That opiates modify electrical action, and stimulants excite it; and in time all diseases will be cured by proper electricity in food, or directly applied. So that health will become almost universal, and it will be nothing unusual a few centuries hence for men to live one or two hundred years, or more.

In Egypt a hot, dry country where perspiration is necessary to health, the common salutation is not how is your health, but how do you perspire? So the common saluta-

tion of the future may be, not how do you do, but how is your electricity?

The future great nations that will likely dominate the earth are England, the United States, and Russia, and they will possess all except central and western Europe. Russia in time will drop her imperialism in the present tendency to large, free and beneficent governments. War which was the chief agent of civilization in the early ages, will be superseded by commerce.

The coming future points the finger of "manifest destiny" to the whole Western Hemisphere as the possessions of the great American Republic; and all the islands of the sea necessary to make her the greatest maritime power in the world's history. Expansion has and will come and bring mutual blessings, freedom and power to all; not by conquest, for mankind has discovered that commerce must take the place of war, and mutual interests will bring together, and bind stronger than bayonets. We have what no other nation ever possessed, and that which the world did not have a century ago—forty millions of educated people. Rome when she ruled the world had only twenty-three millions, including barbarians, and less than half a million of educated people. No nation is likely to equal us in the number of its educated, vigorous, patriotic population, and the extent of its compact territory, nor in freedom and advance thought.

In a few more years the concrete wisdom and patriotism of our nation will have settled all the puzzling questions that have marred our peace, and retarded our progress; and in the coming centuries our prosperity and renown will be glorious and complete:

A nation nobly, truly great,
And worth a million hero lives;
And towering o'er the realms of fate
Enduring as the earth and skies.

The future will bring manifold blessings to the race, but the hereafter will complete and perfect it. For immortality is written in the abiding faith of all human hearts; in the dreams and aspirations of all longing souls; in the hopes and joys of undying spirits clothed in dust. They were given as a deathless promise to the heaven-soaring, bliss-bound soul. For it is a part of God and shall be like him a master of the universe; and shall be with him a crowned king of universal empire.

All nature affirms this. God whispers it in the returning springtime, in the new-blooming flowers, in the ever-bending heavens and the eternal stars.

From heaven's far off jeweled towers
God hangs the stars like banners bright,
And in the silent whispering hours
His voice is in their beams of light.

As man looks within himself he sees the mighty universe of mind, and the subtle mystery of noble and undying thoughts surge like boundless billows through his godlike nature. It is the god within him that inspires his dreams, and stirs his deathless hopes.

As man looks up to the golden words written on the bending dome of heaven, and reads the wondrous pages of creation, and contemplates the mysteries of time, and the measureless sweep, and boundless possibilities of eternity, his inquisitive soul seems to rise to the altitude of a god, as he confronts the universe, and asks:

"By what divine enchantment was it raised
For minds of this first magnitude to launch
In endless speculation, and adore?
How boundless in magnificence and might.
O! what a confluence of ethereal fires
From urns unnumbered, stream down the steeps of heaven."

All creative progress and life are founded on the perfection of God, and the ultimate perfection of man. If man cannot become perfect here, then there must be a hereafter where the godlike in his nature shall attain perfection, and stand in the presence of its creative Deity.

If there is no hereafter for man, then life is an unmeaning enigma; the universe is bereft of a beneficent, intelligent, moral Deity; and earth is an orphan planet floating in a boundless sea of measureless forces, without purpose or destiny.

Without a hereafter the lives, hopes and character of humanity would lose their perennial interest, lofty purpose, and inspiring dreams; and selfish ambition would impel each to gather all comfort and pleasure regardless of others, in life's brief journey from darkness and nothing to silence and dust.

Without a belief in the consequences of conduct beyond this present life responsibility would virtually cease. Aside from the interest of the individual there could only be social constraint, which would not control unsocial natures. There would be no object for the cultivation of character, as the purest and noblest efforts, and most heroic self-denial would equally with a debased and sensual life, end in the charnel house of oblivion.

Professor Goldwin Smith, an atheistic materialist in his latest utterance says "It is not on the old ground that the doctrine of a future life can be sustained. Bishop Butler has said in the most effective way all there was to say from his point of vision that the soul or conscious being is indivisible, and unaffected by the dissolution of the body." But he finds what he deems a stronger argument when he says: "Yet there is a voice within us which tells us that in the sum of things it will be well with virtue; and that the effort and self-denial expended in the promotion of a *good and beautiful* character, will not have been expended

in vain. No man at the end of life whatever his course or success, but would wish that his life had been righteous. If you ask me how this can be without the existence of a soul as an entity separate from the body which is liable to dissolution, my answer is that I cannot tell. But I do not on that account refuse to listen to a genuine prompting of my nature, merely because it is not confirmed by the evidence of sense. Our whole being is a mystery. Try to realize in thought, eternity and infinity, and we become conscious of that fact. Our sense tells us little more of the universe in which we live probably than sense tells the purblind mole which thinks it sees all there is to be seen. We are happily casting off superstition, but there still may be some scope for faith."

The moral purpose and material progress of creation cannot be denied. Man, its highest expression, has shed rivers of blood and floods of tears in climbing the thorny paths of progress to higher plains of perfection. There was a time in the history of the race when pain gave pleasure to those who saw it. Man smiled while his fellow endured tortures too terrible to describe. Can civilized man do this? If he can we call him "a degenerate."

In the years gone by lust ruled love, now love rules lust. Man's freedom and woman's virtue, were ideas little known until the Nazarene proclaimed his heaven-sent truths. The inhumanity of the early ages has slowly developed to a godlike humanity, with almost the attributes of Deity. Passion is curbed, oppression, superstition and bigotry are disappearing in the dawn of the millennium of love and knowledge.

Man has conquered the forces of nature, and is now conquering himself, until existence here is becoming a stainless, voluptuous bliss, and life itself a spiritual and a sensuous joy.

His physical being is blessed with the boundless com-

forts of civilization, and his spiritual being ennobled and inspired by the divine truth that "he who loveth knoweth God." And he shall climb up and pass on from comparative perfection here, to ideal perfection hereafter. And in the infinities of the future the ultimate purpose of creation will be accomplished in the ideal perfection of man and the universe. And God will be glorified in *all* his works; and the stars with their celestial cities,¹ will lift up their pearly gates and "sing together," and "the spirits of just men made perfect," and become "the sons of God shout for joy," as in the early dawn of time, when God broke the silence of the dead eternities.

All souls are atoms of one spark divine,
And are as one when bowing at truth's shrine;
All thought, all greatness since the ages roll,
Is but the upward step—the onward march of soul.
From earth to suns—from truth to truth afar,
Our souls may to perfection step from star to star.

Live like a monarch of vast realms sublime.
Dread not decay of age, or wrecks of time;
All hopes, all fears, all sorrows shall be thine.
Be wise and strong, and fearless of all fears,—
Think of the bright, unfading, countless spheres
Thy soul shall tread beyond these cycling years.

¹These questions are discussed by the author in his forthcoming volume "The Cities of the Sun."

TO TAP ELECTRICITY BY TOWER TO CLOUD

Daring Scheme of a Minister Is
Declared Feasible by
Engineers.

If the plans of the Rev. Theodore Geisel, of Beyonne, do not go amiss, men may soon be harnessing electricity by the bottleful. He states that he has planned a tower reaching to the clouds that will attract and extract all their electricity and convey it to receptacles on earth, where it may be used for commercial purposes. He also declares that by thus robbing the clouds of the electricity all danger of lightning will be removed.

Mr. Geisel is a Baptist minister. He has followed in the footsteps of Ben Franklin, he says, but has learned what Franklin did not—that there is an energy in the clouds potential during thunder storms that can be stored, the very act of storing it taking from nature the necessity of the rumbling thunder and sharp flash of the lightning. Electric storms, he contends, are but nature's attempts to rid herself of a surplussage of energy.

From Nature's Leyden Jars.

To bottle this energy is his purpose. His towers will, he contends, act as circuit makers for the electricity in nature. The upper regions of the air, he asserts, are like Leyden jars, which when overcharged give off an electric spark. He says that when his towers are put in operation

